AMERICAN GAS JOURNAL

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NEW

Model "FC" Combination Thermostat and Oven Valve. Both units — grouped together for convenience and attractive design — are entirely separate in operation and adjustment.

SHOW the Robertshaw..and you have "her" interest immediately.

The records prove it. Over 1,800,000 Robertshaw equipped ranges are now in use. And every one of them is still doing a selling job . . . for the woman who has a Robertshaw is constantly telling her friends about it.

Women today, more than ever before, want the freedom of Robertshaw automatic oven control . . . the relief from kitchen drudgery . . . the certainty of trouble-free performance that is assured by a *genuine* Robertshaw.

Your best selling plan this season is to push the ranges you have faith in . . . the Robertshaw equipped ranges that experience has proved will give continuous satisfaction and keep free from costly service charges.

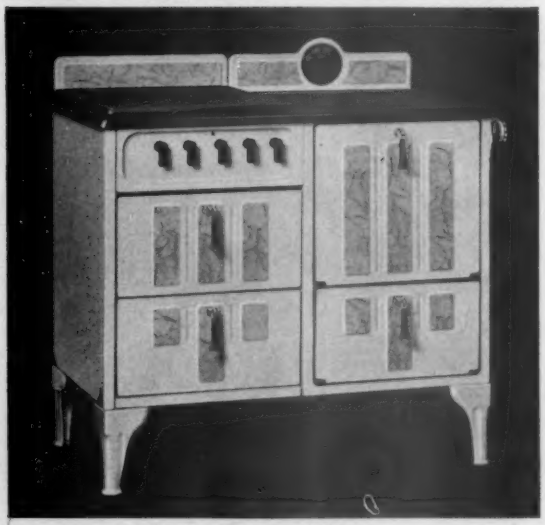
ROBERTSHAW THERMOSTAT COMPANY • YOUNGWOOD, PA.

ROBERTSHAW

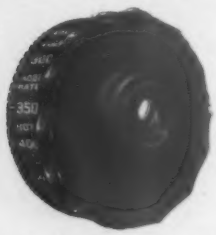
"AutomatiCook"

Magic Chef

AMERICAN STOVE COMPANY



Magic Chef No. 1204-0 Patented



Look for the RED WHEEL
When you buy a MAGIC CHEF

Magic Chef No. 1202-3 Patented

THE NEW
TABLE TOP MAGIC CHEF
SERIES 1200

THIS beautiful Magic Chef Series, with table top convenience and popularity, offers to gas companies and dealers an unequalled sales opportunity.

Magic Chef No. 1204-0 shown at top left, is porcelain enameled in Old Ivory and Green with panels and back splashers in Green Marble effect.

Magic Chef No. 1202-3 is porcelain enameled in Ivory and Green with panels and back splashers decorated with an artistic tile design.

The 1200 Series also comes in other attractive color combinations.

The cooking top is flush with the oven top to permit easy sliding back and forth of oven utensils. The cooking top section has a folding top buffet coverall to conceal grates when not in use. A convenient drawer-type broiling compartment containing the famous Grid-Pan Broiler is a special feature.

Other Magic Chef features in the 1200 Series include the Magic Chef Non-Clog Burners, the Magic Chef High Burner Tray, the Magic Chef Automatic Top Lighter, fully insulated ovens, roomy service drawers and the famous Red Wheel Lorain Oven Regulator. Any range in the series equipped with Telechron Electric Time-Control Clock at extra cost if desired. Write for color illustrations and full description.

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World's Largest Manufacturer of Gas Ranges

BOSTON · · · · NEW YORK · · · · PHILADELPHIA
ATLANTA · · · · CLEVELAND · · · · CHICAGO
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October 1933

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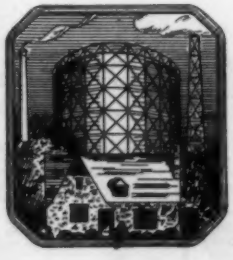

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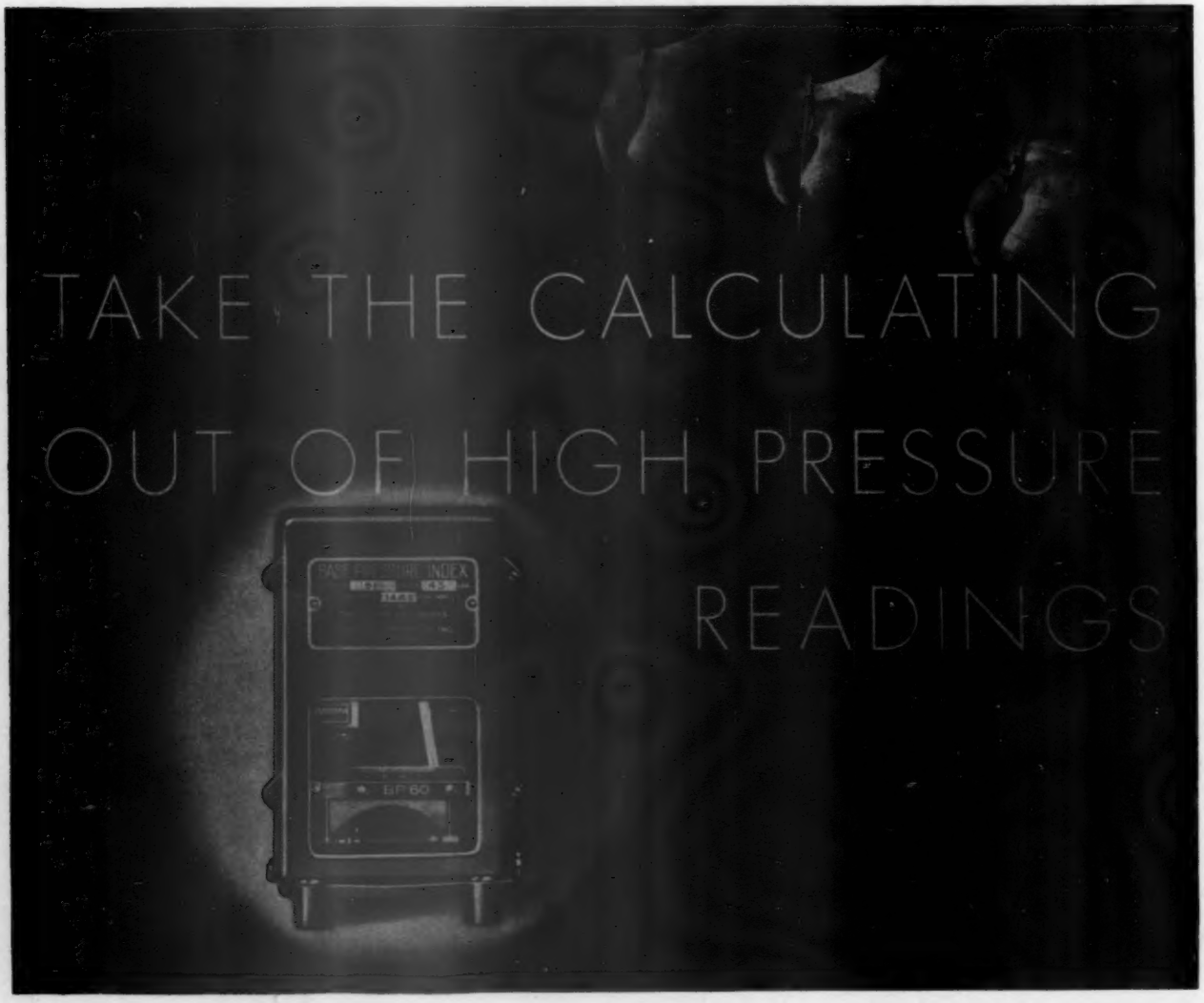

● Totalized readings . . . automatically . . . continuously! Chart calculating is eliminated. High pressure readings are simplified. Contract billing data is always available . . . instantly.

The BASE PRESSURE INDEX continuously registers a totalized reading of the quantity of gas which has passed through the displacement meter (at the base pressure). Each hundred cubic feet (actual volume at line pressure) is multiplied by the pressure factor which applies for the line pressure and the pressure base.

This instrument is ruggedly made, and can be tested and adjusted in the field.

If a permanent record of the hourly rate of flow and pressure is desired, a VOLUME AND PRESSURE GAGE also is used.

Engineering bulletin E-12 gives all the details of application, operation and installation. It will be mailed on request.

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Measurement and control of Gas, Oil, Steam, Air and Liquids
ESTABLISHED 1836
METRIC METAL WORKS *ERIE, PENNSYLVANIA*
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ELECTROLUX ANNOUNCES

record-breaking acceptance of the new

AIR-COOLED MODELS

SIX MONTHS AGO we introduced a new Electrolux. It used no water. A tiny gas flame circulated the simple refrigerant. Ordinary air cooled it.

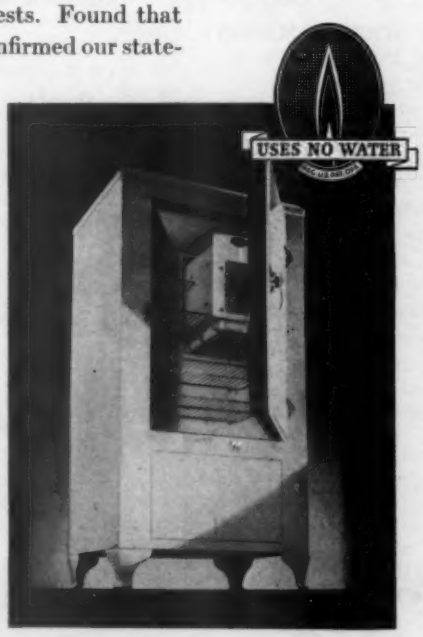
Enthusiasm grew as the New Air-Cooled Electrolux passed every test, exceeded every requirement. Many gas companies took it into their own laboratories for inspection. Gave it severe hot-room tests. Found that its performance not only confirmed our statements but definitely surpassed our claims.

The New Air-Cooled Electrolux offered everything any other refrigerator did, and more. However, extravagant claims for automatic refrigerators are not uncommon.

We preferred to present the simple facts and let the New Electrolux win its own praises.

It did—in an amazing degree. Within a month orders far outran production. We put more men to work, added shifts, increased factory facilities. The enthusiasm of new owners further stimulated sales.

The New Air-Cooled Electrolux merited this confidence and wide acclaim. Throughout a summer that broke fifteen-year heat records it has given more than satisfactory service. Thousands are glad they chose Electrolux.



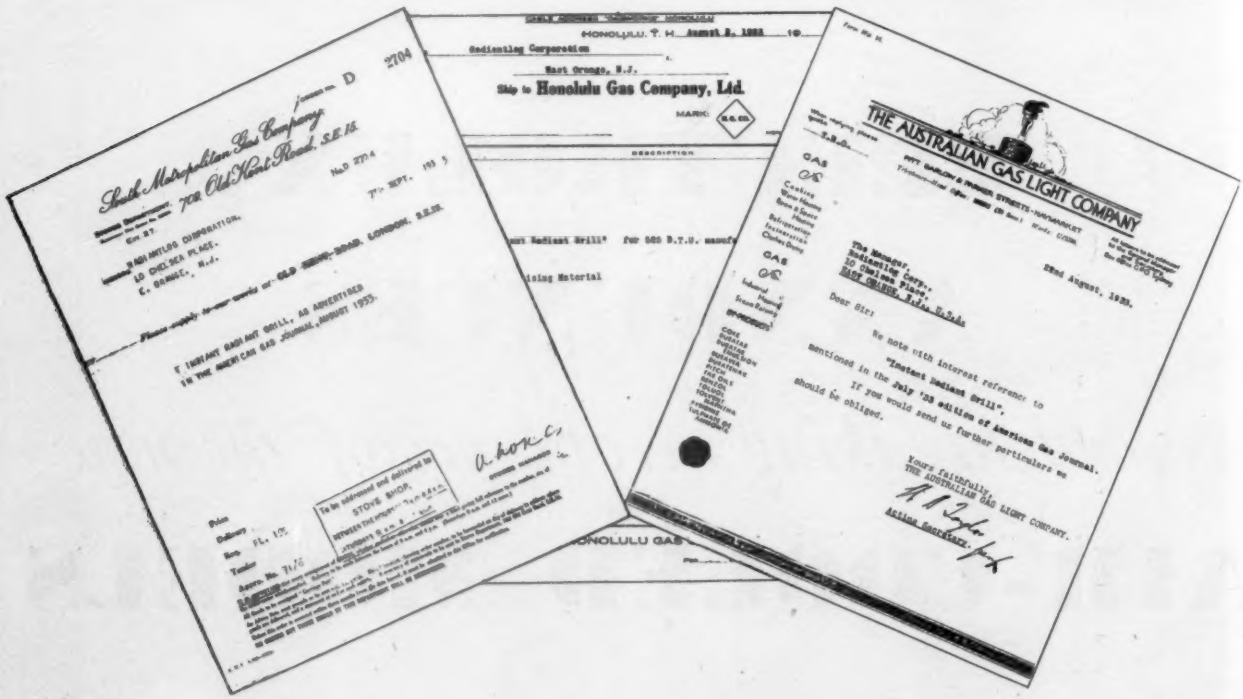
Electrolux acknowledges with appreciation the important part which the gas companies throughout the country have played in the achievement of this record-breaking public acceptance.

Continued support during the coming year should develop an even greater market for the New Air-Cooled Electrolux . . . prove an even greater load-builder for the gas industry.

Electrolux Refrigerator Sales, Inc., Evansville, Indiana.

NEW *Air-Cooled* **ELECTROLUX** THE *Gas* REFRIGERATOR

A PRODUCT OF SERVEL


South Metropolitan Gas Company
Radiantlog Corporation
East Orange, N.J.
Ship to Honolulu Gas Company, Ltd.
THE AUSTRALIAN GAS LIGHT COMPANY
Dear Sirs
We note with interest reference to
"Instant Radiant Grill".
mentioned in the July '33 edition of American Gas Journal.
If you would send us further particulars we
should be obliged.
Yours faithfully,
THE AUSTRALIAN GAS LIGHT COMPANY.

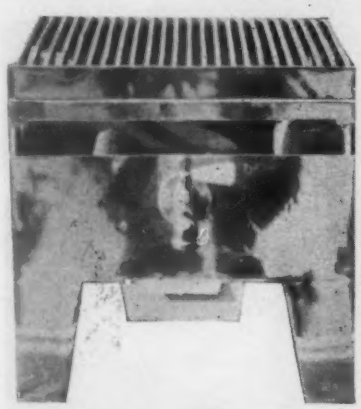
FIRST ANNOUNCEMENTS OF INSTANT RADIANT GRILL BRING EXPORT ORDERS

Chefs in foreign countries have been trained for years to grill meats OVER the fire. The meats to be grilled or broiled, are placed on an open lattice grill over the fire so that the under part of the meat is singed and the juice cannot run out.

The grease from the fats drips down through the grill and does not come in contact with the lean of the meat. The Instant Radiant Grill is built on this principle using gas—the modern and efficient fuel.

Our foreign gas brothers are quick to appreciate these facts, and are ordering Instant Radiant Grills.

This Grill is simplicity itself.



No radiants to break, no fire brick or refractory substance to fuss with or replace, no air shutter to adjust or clog up, no bunsen tube to cause flash back, no complicated parts. You simply light it up and turn it out when not in use.

If you like a real juicy tender steak done to perfection, with all the aroma and flavor, and without the grease stewed into the lean of the meat, then order a section of the Instant Radiant Grill and see for yourself.

Write for descriptive booklet.

Radiantlog Corporation, 10 Chelsea Place, E. Orange, N. J.

Editorials

Convention After-Thoughts YEAR after year gas men attend their annual convention with its kaleidoscopic cross section of social and serious admixture. Papers and addresses are listened to with more or less interest, chatting in the hotel lobby runs the gamut from B.t.u.'s to the latest golfing exploits, menu cards in fancy eating establishments are highbrowedly surveyed with all the air of a confirmed bon vivant, cigars protrude from mouth corners at rakish angles, everybody looks important, big talk is in the saddle and an altogether high batting average, either in the direction of culling in knowledge or strutting the "real guy" stuff, is attained.

Granting that the measure of any convention's success—or at least so we have been wont to loudly clamor—depends almost entirely on how much useful and usable information the average delegate is able to derive from its manifold activities and translate into actual practice in his own particular job, it is very likely that, up to the time of the depression, the above mentioned batting averages in both directions were a standoff; consequently, the convention itself proceeded along its kaleidoscopic way at no better than half speed. This latest convention of the gas industry, however, we feel sure will receive a pretty high rating—the highest we have experienced up to date, let us hope.

But why the comparatively sudden thirst after the more serious side of the convention's offerings? The answer, we believe, lies in the fact that the gas industry has at last awakened to the knowledge that it has a man's sized job to handle—Loebell, we are of the opinion, clearly drove home this latter point in his paper delivered before the Industrial Gas Section.

For days during the very start of the World War the Allies lulled themselves into a position of false security with the reiterated statement that the Germans could not pass the forts on the Belgian frontier; but history now reveals that first a few Uhlans were noted in the peaceful farming section of the country, then a small cordon of bicycle couriers put in appearance and—then came the gray horde.

Viewing our own industry, one might say that the first few Uhlans of competition have filtered through past our once considered impenetrable defense; indeed, it is quite possible that the harbinger of real danger, the small cordon of bicycle couriers, is in our midst. The answer is obvious—the gray horde must be stopped or otherwise we are in for a pretty long term in the trenches of devastating competition.

At present we cannot count on much accelerated increase in the population; consequently, an increase in new customers will be scarce. Further, there will be required only a certain quantity of heat to satisfy the country's needs; hence, competition will become keener. Following Loebell's warnings, we will have to devise and wheel into action the heavy artillery of study and research. Production, distribution, selling procedure, consumer and market studies, and in fact all of our routine will have to be revamped, and not much time can be wasted in getting to the job at hand.

Not only has the gas industry taken stock of its situation by way of its recent convention but we believe that the greater number of those in attendance will efficiently carry the message back to their respective managements. And if gas company management as a whole does not heed the warning, there is not the shadow of a doubt but that we are in for some very strenuous times, and a job with a gas company wont be quite so desirable as it is at the present.

This convention has been eminently worth while in that it has sounded the tocsin. Now, it is up to the management—the fellows who have the final say—to show its mettle at a time when the gray horde of competition is almost at our gate. Let them but outline the plan of attack and they can be sure that the great body of employees will carry on to their entire satisfaction.

****

The presence at the convention of a number of gas men from overseas and the several papers and addresses delivered by them should convince us that, although our methods might be quite different, we are all striving to reach the same objective—increase in the per meter consumption. We cannot but admire the dogged persistence with which our British cousins have hung onto the lighting load and their whole hearted attitude toward advertising which, peculiarly, is very like our own.

If we can absorb some of the enthusiasm of all of these foreign delegates and the optimism and determination of the gas cohorts of John Bull to carry on—and he has been a deal longer in the throes of depression than we have—we can count ourselves both sensible and lucky individuals.

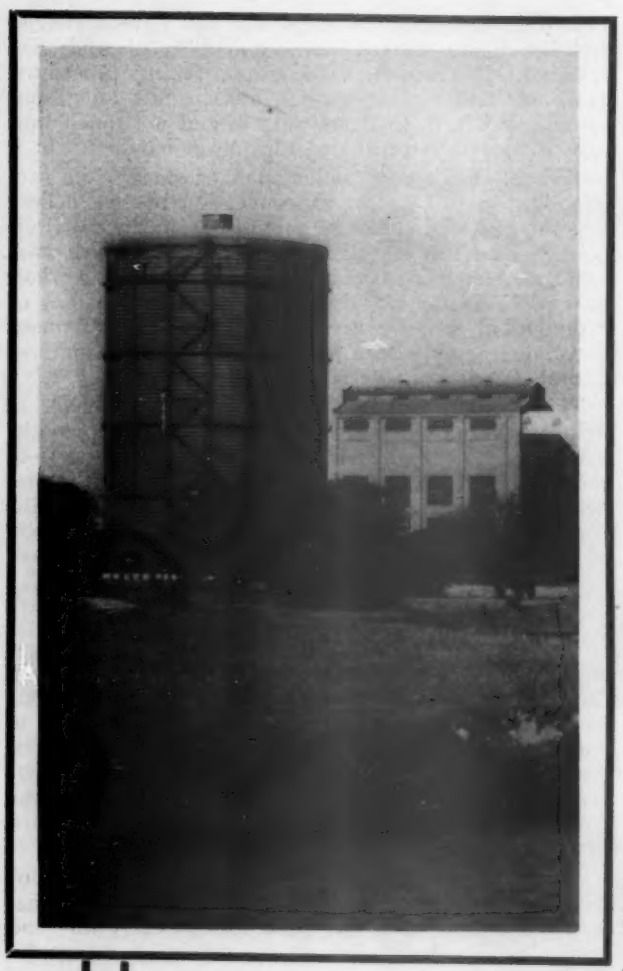
And as they journey homeward, we trust that they will feel that they have our hearty thanks for helping us to fashion out a first rate convention and that they have a standing invitation to come and see us soon again.

Henry M. Riley

Editor.

OCT 24 1933

A RECORD OF LEADERSHIP



IN 1924
THE BARTLETT HAYWARD CO.
Introduced and built the
FIRST
WATERLESS GAS HOLDER
In This Country

48 WATERLESS HOLDERS
(M.A.N. TYPE)

varying in size from 500,000 to 20,000,000 Cubic Feet, have been erected and placed in operation since then; representing storage capacity of over

300,000,000 CUBIC FEET
which is approximately

22%

of all Gas Holder capacity now in service in this country.

—further evidence of our untiring efforts to offer continual advancement to the Gas Industry.

THE BARTLETT HAYWARD CO.

—BALTIMORE —FOUNDED 1832— MARYLAND—

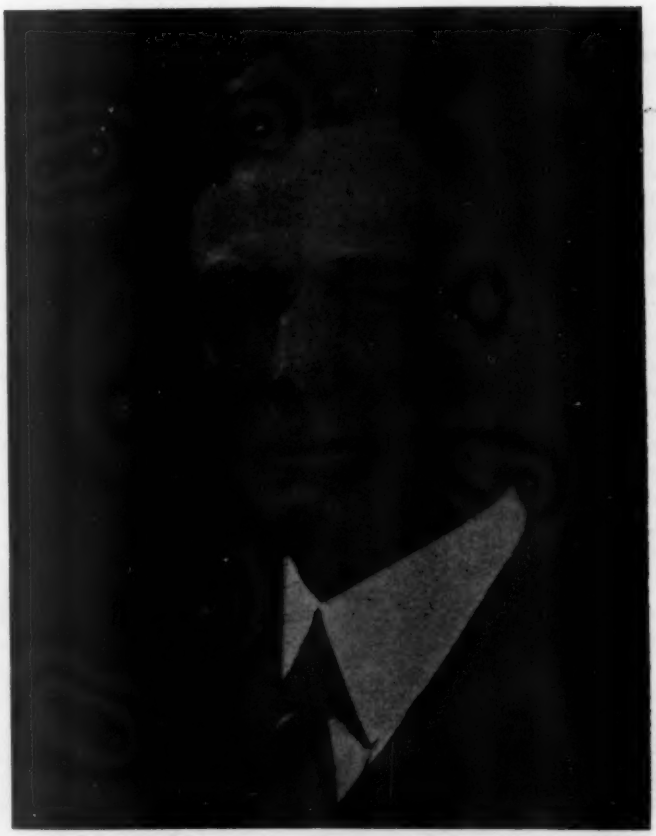
SUBSIDIARY COMPANY: THE WESTERN GAS CONSTRUCTION COMPANY, FT. WAYNE, IND.

Coal Gas, Carburetted Water Gas, Blue Water Gas, By-Product Plants—De Brouwer Charging and Discharging Machines —Waste Heat Boilers—Purifiers—Tar Extractors—Condensers—Feld Scrubbers—Fast's Couplings—Tanks—Gas Holders

AMERICAN GAS JOURNAL
October
1933

Gas Industry Sizes Up the Situation at Its Annual Convention

Foreign Gas Men Contribute to the Success of the Meeting



H. O. Caster
President-Elect, American Gas Assn.

THE general tempo of the recent meeting of the American Gas Association in Chicago, September 25-29, might be said to be that of the gas industry taking stock of its position as regards competition and future growth. Certainly this was borne out by a number of papers which not only stated the proper path to pursue but cautioned against delay in immediately tackling the problems which must be satisfactorily solved in order to assure the desired success in the near future.

Although the attendance was not up to the usual figures, yet key men from widely scattered sections of the country furnished a representative and well rounded out gathering. Further quality was added by reason of the relatively large number of gas men from abroad, several of whom contributed to the success of the convention by way of reading papers and delivering addresses. While these papers and addresses were not of immediate application to our situation, still considerable over-all good can be said to have been derived by those who heard them. In this connection their force and inspiration well substantiated the coname of this meeting, International Gas Conference. Incidentally, these foreign delegates came from England, France, Switzerland, Belgium, Canada. Since the Chicago meeting many of them have indulged in an inspection trip to a number of gas companies in our larger cities.

The well attended general and sectional sessions furnished proof that the large majority of those in attendance came primarily to derive usable information and advice to apply to their own particular situations, the Fair itself playing second fiddle.

The gas exhibits at the Fair came in for a generous inspection on the part of all and somehow served to remind one that this feature of our usual conventions makes for meetings of more than passing accomplishment and success.

As one both gracious in his personality and administratively efficient, President Hewitt concluded a successful term as head of the Association.

American Gas Association through its various officers and committees were again able to supply us with a meeting quite up to standard and merit hearty commendation accordingly.

In view of the general business situation, one cannot but apply to this fifteenth annual gathering the term, "well done."

General Sessions

Making Progress In A Trying Year

THE address of President Arthur Hewitt showed very clearly the efficient manner in which the affairs of the Association have been changed to meet changing business conditions, at the same time, without impairing any of its vital usefulness.

In part Mr. Hewitt brought out the following points:

"At the beginning of the Association year now about to end, the revenues of the organization were substantially reduced, due in part to lower gross receipts of member companies, but mainly to a reduction in the basis of gas company dues. Our Control Committee, under the able leadership of Mr. R. W. Gallagher, carefully reviewed the pending and proposed activities of all the Sections and of all the General Committees, and recommend to the Executive Board certain items which, in their opinion, should be suspended, and other items which could be curtailed in cost. For the most part, these recommendations were approved by the Executive Board. The Finance Committee revised the budget of estimated receipts and expenditures so as to trim our sails in accordance with the economic winds.

Drastic Curtailment

"During the immediately preceding year, there had been a substantial reduction effected in the contributions toward Association support on the part of most of the larger gas companies, when the special fund for industrial gas research was merged with the general Association fund.

"These two items—the elimination of special contributions for research, and reduction in dues—brought about a curtailment of approximately 35% in Association receipts from gas companies.

"Adjustments were readily made by the Sections, by Committees, and by Headquarters. That work of the Association which was deemed by the Control Committee and by the Executive Board to be the most important, was carried on throughout the year on the reduced basis, and we have lived, as the Treasurer's Report will show, well within the family income.

"In the language used by the Control Committee in its report to the Executive Board a year ago, 'we are solvent and in no danger of being anything else.'

"We have been most fortunate in avoiding the fiscal and other troubles which have beset so many national organizations during the past few years.

Commendable Efforts

"The saving of expense to our member companies in their direct financial contributions to the Association, is not the only commendable work accomplished through the operations of our Control Committee as endorsed by the Executive Board. By careful analysis of committee activities, and with the cordial support and cooperation of Section officers and general committee chairmen and members, it was found possible to reduce the number of committees and to limit their membership. This has resulted in further substantial savings to member companies in the time and traveling expenses of their employees who are members of committees.

"In my opinion, the work has been none the less efficient, and we have covered the more important duties which the Association owes the industry.

"One of the very vital matters dealt with by your Executive Board relates to the two Codes filed on behalf of the gas industry with the Administrator under the National Industrial Recovery Act, one covering the manufactured and mixed gas industry, and the other the natural gas industry. It was agreed that the President of the United States must be given a full measure of support from this Association in his efforts to relieve the unemployment situation and to restore national prosperity. Copies of these Codes, as finally agreed upon, have been forwarded to all member companies. Here I desire, on behalf of the Executive Board, to thank the members of the special committees appointed to carry on the negotiations with the Administrator, for the splendid service which they rendered to the Association and to the industry in connection with this most seriously important matter. The duties which fell upon Major Forward and the members of his staff were extremely heavy, and the manner in which these duties were discharged merits our warmest commendation."

"It would be an inexcusable omission if I should fail to refer to the splendid constructive work of the trade press of the gas industry. Always ready to help, always welcome at our councils, always keeping abreast of or ahead of the times, they are indispensable and deserving of general support.

"The manufacturers in our membership, those who produce gas-making machinery and other equipment, and still more the manufacturers of appliances, have had even more troublesome times than our operating gas companies. Manufacturers' problems are many and difficult, and it is gratifying that we have been able to contribute through our organization towards the attempts at their solution. Our manufacturers by and large, are most progressive, and they have placed at our disposal and at the disposal of our customers, most efficient, most constructive and the most thoroughly satisfactory appliances in the history of the industry. We have nothing to be ashamed of in any way, but a great deal to be proud of. Our manufacturers are well represented on the Executive Board and on a great many of our committees where their contributions are excellent and welcome. They deserve not only consideration, but constructive support in their contributions towards our common cause.

Guaranteeing Exhibit

"By means of special generous contributions from a group of companies, the larger portion from companies in and about Chicago, we have been able to have a gas exhibit at A Century of Progress Exposition. It is located in Gas Industry Hall, connected with the Home Planning Hall. It represents a modest effort to tell the visitors to the Fair, something

about how natural gas and manufactured gas is produced, transported, and made available in many ways. Planning and consummating an exhibit intended for purely temporary purposes, with very limited funds and very brief time, was a most difficult task for our committee, of which Mr. R. B. Harper was the Chairman, and the industry owes them a debt of gratitude.

"As an industry, we are subject to most of the untoward conditions of the times, and our policies and practices must be adjusted and readjusted from time to time to meet these changed and still changing conditions. New days demand new ways. Like other national industrial undertakings, if we do not deal wisely with our problems while they are ours to deal with, we may drift on till natural forces compel a solution of them in ways which may spell disaster for us. How important it becomes, therefore, that we should adequately support an association which exists for the sole purpose of investigating, studying and advising on the great variety of problems, the wise solution of which is of such tremendous importance to the gas industry and to the public generally. The past history of this Association has demonstrated the willingness of its members to accept chairmanships of and membership on committees of the various Sections, and the Association has been fortunate indeed in the quality and outstanding ability of the men who have given so freely of their time for the discussions and conferences which have resulted in such definitely helpful reports as have been presented from time to time to the general membership."

The Association's Job

IN OUTLINING some of the functions of American Gas Association, Managing Director Forward touched upon the matter of taxation as follows:

"Annually I have directed the attention of the industry to the continued and consistent increase in the burden of taxation. In 1924 our taxes amounted to 8.7 per cent of the operating revenue of the industry, whereas by 1932 the rate had risen to nearly 11 per cent of our entire operating revenue. The grand total last year was no less than $75,200,000. In that year the taxes of the natural gas industry amounted to $5.45 for each natural gas customer served while in the same year the taxes of the manufactured gas industry amounted to $4.57 for each customer served.

"This tax situation is now nothing short of alarming.

"As a matter of fact, we are told frankly by some of our statesmen in Washington and in state capitals that increasing taxation is the easiest way to take money away from the owners of utility securities because it is said they have fared rather better than the investors in other lines; the theory being that no matter if the utilities did not share in the high profits of prosperous years, nevertheless, they have more money than other people now and it must be taken away from them. So Congress and the Legislatures sock the investors in utility securities. There are perhaps two million of them: will they take it lying down?"

"On two occasions," said Major Forward, "within the Association year about to close the necessity for a solid front has been fully demonstrated. One occasion was the proposal in the Congress of the United States, made for the second consecutive year, to impose upon the gas industry a tax upon gross receipts similar to that for which the electric industry has been most unjustly singled out. But for the American Gas Association every company represented in this room would be paying 5 per cent Federal tax on their receipts. That would wipe out the returns on most of the investments in common stock, in some cases the returns on investments of preferred stock and in others would bring about default on bonded indebtedness.

"The other instance to which I refer was our participation in the Na-

Dr. William R. Hainsworth, director of the Electrolux Refrigerator Laboratories at Evansville, Ind. (right), receiving the Charles A. Munroe Award from Mr. Munroe, the donor (left), at the annual convention. The Award is granted annually for "the most outstanding contribution by an individual to the advancement of the gas industry" during the year.

tional Industrial Recovery program. It was necessary for us to convince the Administration in Washington that our Committee was speaking for the gas industry as a whole. Otherwise we cannot be heard."

"It did not appear from the measures adopted nor from the debates in Congress that there was any intention on the part of any division of the National Government to bring the operating public utilities, all of them under regulation and mainly so by the separate States, under the provisions of the Act. As a matter of fact statements were publicly made after the adjournment of Congress by members who had figured prominently in the preparation, consideration and passage of this legislation, to the effect that utilities would not be included. Accordingly there was a brief period in which the gas companies had no activity in this respect except for consideration of the subject by a group of companies engaged in interstate commerce, notably the owners of natural gas pipe lines.

Selah S. Tomkins, assistant chief chemist of the Consolidated Gas Company, New York, N. Y., received one of the outstanding honors within the gift of the American Gas Association when he was presented with the Beal Medal at the annual convention. The presentation to Mr. Tomkins was made by E. R. Acker, president of the Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y., acting in behalf of the family of the late W. R. Real, who first offered the medal in 1897 for the best technical paper presented at association meetings.

Mr. Tomkins' paper on "Gas Detection Instruments," presented before the association's Technical Section a year ago, won for him this recognition. The Beal Medal Committee was unanimous in recommending to the American Gas Association Executive Board that year's award go to Mr. Tomkins. Members of this committee are as follows: I. K. Peck, Midland United Company, Chicago, chairman; J. A. Perry, The United Gas Improvement Company, Philadelphia, Pa., and O. S. Hagerman, American Light and Traction Company, Chicago.

This award consists of a gold medal and financial recognition, and has been sparingly bestowed. The list of those who have received the medal in the past contains the names of men well-known as leaders in the gas industry. Following are those who have received this medal:

Henry L. Dougherty, Arthur Glasgow, I. N. Napp, B. H. Spangenberg, Henry L. Rice, W. H. Gartley, W. H. Fulweiler, C. J. Ramsburg, H. W. Alrich, L. E. Worthing, C. O. Bond, O. B. Evans, F. E. Steere, E. J. Brady, F. W. Sperr, Jr., Arthur W. Warner, Ralph L. Brown, L. J. Willien, Louis Stein, Philip Thornton Dashiell and R. B. Harper.

Concerning N.R.A.

"Following is a portion of the statement made by President Hewitt to our Executive Board at its special meeting held on August 1 to consider this subject:

" 'The National Industrial Recovery Act as passed by Congress and approved by the President did not seem applicable to public utilities. That act was intended as the keystone of the Administration's program for industrial recovery, to reduce or eliminate unemployment by reduction in working hours, and in connection with expenditures for public works, to increase the purchasing power of labor, and indirectly the total population, by fixing minimum rates of pay. Agreements between units in an industry without accountability for violations of the anti-trust law are implicit in this legislation.

" 'The public utility industry is probably responsible for less unemployment than any other major industry. Its wage scales have been fairly well maintained and its working hours are generally reasonable.

" 'Besides, it was felt that the Administration could not possibly intend to place the public utilities between the upper millstone of federal regulation of hours and wages and the nether millstone of state and local regulation as to rates and service.

" 'We cannot store our product and hold it for favorable market conditions as can industrial manufacturers, nor can we of our own volition increase the price of our product in response to advancing costs of labor and materials, and constantly mounting taxes, as industrial organizations generally are expected and even encouraged to do.

" 'Disturbed because of the slowness in development of the presentation and approval of codes for industry, the President determined to issue, and did issue, a blanket code, said to be designed for voluntary adoption by industries generally under organized salesmanship, to be in force in the interim of formal preparation and presentation and approval of industry codes. Public utilities are referred to by name in the President's Reemployment Agreement, and spokesmen for the Administration have now specifically stated that utilities are intended to come in under the terms of the Act.' "

"The attitude of the Administration may be stated in the following extract from a letter written by the Deputy Administrator of the National Recovery Administration in charge of public utility codes.

" 'Replying on behalf of General Johnson, I beg to advise that this Administration solicited the full cooperation of the public utility companies of the United States in the President's Reemployment Program. The American Gas Association, representative trade organization of the gas utility industry, responded to this invitation and at the direction of General Johnson submitted on August 5 codes of fair competition for the gas operating utility industry and the natural gas industry. They requested the substitution of certain paragraphs from their proposed codes for corresponding paragraphs from the President's Reemployment Agreement. These requests have today (August 11) been granted.' "

"Committees were appointed as a result of consideration of this matter which prepared separate codes for the manufactured-mixed gas industry and for the natural gas industry

which had somewhat different employment and operative problems.

"The code was prepared for the manufactured-mixed gas industry by a committee of which Mr. Herman Russell, of Rochester, was Chairman and which included also Messrs. H. C. Abell, of New Orleans; F. C. Freeman, of Providence; W. C. Beckjord, of Boston; H. O. Castor, of New York; C. E. Paige, of Brooklyn; Geo. H. Clifford, of New York; Paul Clapp, of New York, and W. G. Rudd, of Chicago.

"The Natural Gas Code is in the hands of the following committee: Mr. R. W. Gallagher, of Cleveland, Chairman; Messrs. T. B. Gregory, of Pittsburgh; H. L. Dickerson, of New York; J. D. Creveling, of New York; L. E. Fischer, of Chicago; Floyd C. Brown, of Chicago; Burt R. Bay, of Kansas City; James H. White, of Birmingham, and A. B. Macbeth, of Los Angeles.

"These committees went to Washington and began the long ordeal of conferences, advances and retreats and dealings with an administration which by reason of its rapid growth was not and could not be organized for rapid transaction of public business.

Status of Codes

"It was determined advisable to follow the example of other organizations and to file with the Administration paragraphs from our codes dealing with maximum working hours and minimum pay, in substitution for the paragraphs dealing with these subjects in the President's Reemployment Agreement.

"After innumerable discussions and delays, modified substituted paragraphs were approved on August 11 and copies were transmitted to all of the members of the gas industry.

"Association Headquarters does not know how many companies have subscribed to the codes. Many companies reported their signature to the President's Reemployment Agreement as modified by the substituted paragraphs, some by wire, some by letter. It is known that there are a number of companies which executed the agreement and did not report to the Association.

"Naturally the telephone and telegraph wires and the mailing facilities of Uncle Sam were taxed for days and weeks in discussion of the codes and their applicability to many situations. Gradually these adjustments were worked out until now the inquiries are relatively few in number.

"So far this report has dealt with the gas companies. The manufacturers of appliances were first in the field and have done an enormous amount of work. All of them are engaged in interstate commerce and they began to prepare even before the adjournment of Congress. A meeting of range manufacturers was held during the time of our Association's Spring Conference in Chicago on June 1 where the groundwork was laid for organization to deal with the National Recovery Program.

"As a result of this meeting and subsequent meetings, the manufacturers now have organized in the gas appliance and apparatus industry five institutes, namely: Gas Range Institute, Gas Heater Institute, Gas Water Heater Institute, Gas Boiler, Furnace & Conversion Burner Institute, Gas Apparatus & Accessories Institute.

"These five institutes, together with members at large, constitute the Gas Appliances Institute, which it is expected will be the agency recognized by the government to administer such code as will be finally approved by the President of the United States.

"The purpose of organizing in this manner is to afford all manufacturers, registered in the institute to which they subscribe by virtue of the type of appliance made, an opportunity to establish within their own branches codes of fair competition, supplementary of course to the master code.

"A preliminary hearing on the master code was held in Washington on Friday, September 15, at which certain suggestions were offered by government officials in matters of verbiage, and it is expected to submit the final code for public hearing some time in October.

"That is how the matter rests at this time. The approval of substituted paragraphs is understood to be temporary."

Executive Responsibility for Sales Promotion

SOME of the highlights of this paper by Mr. E. M. Tharp, Vice-President, Ohio Fuel Gas Co., Columbus, are as follows:

"Our greatest weakness is that we have done a job so well that it has become a commonplace in the lives of the people. Service failures are unheard of and even the annoyance of delays or inadequacy has been overcome until there exists a dependability that is taken for granted as involving little of investment or expense in maintaining its habitual monotony.

"It is not enough for us to provide good service, but we must have it recognized for good service and have it appreciated at its real value if we are to have the opportunity to maintain and carry on. This value is not recognized because we, as an industry, have failed to give effective attention to the very important element of human nature as it affects our companies. When we deal in matters of public sentiment or opinion, it is not so much a question of what the facts actually are as what the public thinks the facts are. It is not wholly a question of what conditions are, but also of what they appear to be.

"Until very recent years the dominating problems of the industry were financial and engineering and called for an exact-minded type of leadership that reasoned from cold facts and followed a technology unrelated to the vagaries of human nature. Since the public has come to manifest discontent and misconception of the purposes and values of the service, the effort has been made to meet this situation with rationalized exactitude and to set up a public relations machinery as a feature of the business. Volumes of reports, covering every phase and application of the public relations idea, have been presented at these conventions. Employees have been schooled in customer contacts, in being considerate and helpful and pleasant. All of this has served to improve the human element in the service and has been effective in creating a more favorable impression of the gas company organization. There has been nothing done in the development of our industry of a more essential character.

"The only persons who have been discussing this question of the value of gas service in the language of the consumer are the politicians. We all know that what they have said about it has done us no good. Whenever we have taken occasion to meet this situation, we have followed one of two courses of action; either we talked a lot about our investments and costs, about depreciation and amortization, or we proceeded into litigation. The more we have proceeded in either of these two courses, the more misunderstood we became.

"Talking to gas users about the vast extent of plant and equipment, the huge investments, the tremendous costs, does not interest him much more than discussing the Einstein theory with him. The more we talk about costs, the more he is inclined to talk about costs, but they are not the same costs, and only serve to aggravate a negative attitude. Have you ever read any consumer literature about soap or shoes or socks or underwear that discussed costs? Do the coal dealers talk about costs? If they do, they are gas costs.

Bad Oversight

"The gas industry has done and is doing itself more damage by overlooking or disregarding the merchandising phases of its business than all the politicians in America have done. Before and after any of us are producers, engineers, lawyers, accountants or just plain gas men, we are consumers and if we would take a leaf out of our own experience, we would know that basically the consumer demands the compliment of being sold. The human being in his capacity as a consumer is the unknown factor in our economic speculations. He does not yield himself to exact science or legal form or statistical calculation. He makes possible the volume production of one automobile one year and another the next. He is a Republican one time and a Democrat another. He is both reasonable and emotional; he is both thrifty and extravagant. He is not interested in understanding us. He demands that we understand him.

"The most complicated problems we have to deal with are people—human beings. Our success or failure in the gas industry depends less upon plant and equipment than upon human equations. When we have an investment of twenty thousand dollars to make in some feature of the plant, experts are called into conference, plans are drafted and redrafted and blue-printed and analyzed and studied. We deliberate and revise at great length before we proceed. When we have to employ a man for $100 a month, applicants are received, interviewed without much care, and the job assigned. This proposition is not scrutinized or planned or studied, and yet it is equivalent in every respect to the twenty thousand dollars investment, since one hundred dollars a month is equal to six per cent on that sum. If we will appraise our payrolls on that basis, it will be found there is as much investment in this human element as there is in the physical plant. Is there any reason that justifies the painstaking care by which we dispose of a matter of physical investment that does not apply to the human investment? One carelessly employed and poorly trained man can do more expensive damage than a major plant failure.

"Practically all of the difficulties and forebodings affecting the gas industry today result from a disregard or misconception of humanics. The human factors in our own organizations have not been given the development of incentive essential to their full effectiveness. The vagaries of human nature in our customers have been entirely misunderstood or neglected. These same human elements are the foundation upon which the merchant builds his business. Any individual or concern dealing in the supply of a service or commodity to the public is in a broad sense a merchant. While we are, in every human respect, of this group and subject to this classification, we have not conducted ourselves as merchants or apparently had any of the instincts of a merchant. This is manifested in our obvious failure to merchandise our business to the public.

"Many of us confuse merchandising with selling. It is for this reason that we have attempted to meet this situation and solve this problem by the introduction of sales departments. But load-building activities do not meet the requirements of merchandising in the gas industry. Usually, such a department, if successful, will contribute further to the general misunderstanding, because the more it increases the customer's gas bill the more insistent will he become that there is something wrong with the cost of gas. Load-building and load-holding sales activities are essential but they should harmonize with and be a part of a general merchandising attitude and operation. The real merchandise of a gas company is gas and the basic sales policy of a gas company must be developed around a consistent, all inclusive and persistent selling of the advantages, the efficiency, the economy, the value of that product.

How To Do The Job

"How may this job be done? We have the methods of successful politicians from which we may adapt; we have the methods of successful manufacturers from which we may choose; we have the methods of great merchandisers which we may emulate. We must begin with ourselves, with a faith in our proposition, in our product, in our ability. We must

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In Virginia was had the first public use of gas in America, many years before the organization of the Baltimore Company. On the authority of the American Gas Association, in 1803, a part of Main Street in Richmond, Virginia was brilliantly lighted by a huge gas lamp, erected on a forty foot tower.

An inventor named Benjamin Henfrey had come to Richmond the Winter before, and held an exhibition of his new invention "Inflammable Air" at Hay Market Garden. Admission was fifty cents, and thousands of people witnessed the wonderful sight. The new light was made in a tea-kettle from wood and pit coal. In order to satisfy the people that the demonstration was not a fake, a committee of six prominent citizens, including the Mayor, was invited to see the experiments of lighting and cooking. The Committee's report was convincing, and an octagon light tower was erected. In a few months the large lantern, forty feet above the ground, was supplied with gas generated in a still in a cellar. It was successful at first, but did not last long, and Main Street went back to the animal oil lamps.

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begin with the training in these methods of the entire personnel of our organization.

"The introduction of employee sales education and activity is one of the most effective mediums of carrying the sales idea into all departments of the organization. It gives the employee a finer appreciation of the purposes of the company and by making him a participant outside the circumscribed duties of his department, improves his loyalty and efficiency. In our own company, the employees have been responsible for fifty-three per cent of total appliance and equipment sales this year and we have several times exceeded the best previous months in our appliance selling experience.

A Planned Program

"Employee selling in our company is not subject to sales department stimulus or supervision. It is part of the regular department activity and is a matter of constant coaching and reporting under the foreman or manager. The program is planned by the personnel department, working with the sales department, and is carried through by scheduled group meetings followed by informative and stimulating bulletins and other literature down lines of authority. Aside from a single campaign each year in the early fall, when employees complete sales of space heaters, it has not been our practice to pay commissions. The third of these campaigns is now under way. The two previous campaigns resulted in the sale of approximately six thousand heaters. Seventy per cent of our heating load is from space heaters.

"An essential background for employee selling is employee selection and training, since a large percentage of human beings have no aptitude or personality for salesmanship. The type of employee desirable for customer contact work is the type that may develop sales ability. Our personnel department began a program of selection and schooling several years ago that has proved itself effective as a foundation for a high percentage of employee participation in sales activities. This same program is responsible for the personnel of the sales department itself. Meter readers, collectors, service men, have been developed into salesmen of a highly successful type.

"An important part of the employee sales training is our value of gas school where the employee learns to express the value of gas in terms of the customer's use. For employee training as for sales demonstrations to customers, the story is picturized by means of film projection.

"Value of gas is being sold by these personal contacts of employees combined with newspaper advertising, radio broadcasting, and by means of a miniature newspaper issued monthly by the company and distributed by the meter readers. The effectiveness of these methods and media is checked by home survey work done under the supervision of the Home Service Department.

"Most convincing of the evidences of effectiveness is the large number of rate ordinances negotiated through a period of distressing political and economic conditions. The result was somewhat better than just maintaining a rate level. These negotiations were featured with selling to the public in the cities and towns involved, the fact that gas service at the rates proposed was worth more than was asked for it. The cost of refrigeration, cooking, water heating, space heating and house heating at the rates proposed was compared with the costs of using other fuels for these purposes and the savings designated at dividends to the customers.. When you capitalize cleanliness, convenience and the other obvious advantages of good gas service, it is a simple proposition to show the customer that his savings are greater than the earnings of the company. This puts the transaction on the sound basis of mutual profit. It is the selling method, the method used by the merchandiser, the automobile dealer, the shoe man and the grocer.

Industrial Gas Selling

"When we sell gas for industrial purposes, we follow this method of evaluating the fuel service in terms of competitive fuel and form costs. In our own case, this method has effectively held and developed our industrial load which now averages for the year, five per cent over the 1929 average sendout. If it is a sound method for industrial customers, why isn't it a sound method for domestic business?

"We are confronted with the necessity of adopting a new philosophy —a sales philosophy. It may be said that the gas industry is entering upon a new phase of its history and development. Managements that do not become sales minded will only multiply the troubles of the industry. Our entire organizations and operations must be sales colored. This composite sales attitude cannot be accomplished by employing a sales manager and setting him in a resplendent office and telling him to sell. Sales mindedness must originate at the top to be effective. It involves an understanding of human nature and selling strategy and requires a sense of proportion and consistency for the more intangible activities and expenses involved in selling. A management that shies at expending some thousands of dollars in sales and advertising work because it cannot measure the exact result in advance, is not a sales-minded management. Such a management could fail to spend some thousands of dollars for sales and advertising and then pay in revenue losses and litigation expense fifty times the cost. One of the outstanding and essential capacities of a merchandise mind is the ability to appraise the intangibles of selling operations.

Winning Customer Confidence

"When we take the attitude of constitutional rights out of the picture; when we stop being defensive; when we quit arguing matters of cost and investment with politicians; when we eliminate these things and substitute for them employee selling contacts with customers, and a liberal use of service literature and newspaper advertising, we will replace political attack with customer confidence and support. The politician is on our neck because we have allowed it to be a comfortable place for him. Getting him off is not a day's job or a month's or even a year's. It is a proposition of consistent persistence.

"Revamping such a picture as we have before us calls for the stuff of which a pioneer and a fighter is made. There is nothing in the method that can ever be discredited as propaganda. There is nothing unfair or misleading in such a program. The customer gets good service, but it is labeled; he is given every consideration that will improve his satisfaction but is persuaded that it is appreciation of his patronage; he is

advised of the company's purposes and policies in terms of his interests and benefits; he is made conscious of the service, convinced of the value; he is treated as a prospect, a patron, a buyer.

"The gas industry is on the threshold of a new era, if it accepts the challenge of merchandising. It totters at the edge of a precipice of grave difficulties and uncertainties if it denies this challenge."

The 1934 Convention will be held at Atlantic City the week of October 29th. Exhibits will be resumed

Natural Gas Department

The Relation Between Gas Reserves Developed and Undeveloped and Market Requirements

F. L. Chase
Chairman-Elect, Natural Gas Dept.

"THERE are two methods in general use," said J. H. Dunn, Production Engineer, Lone Star Gas Co., Dallas, "for estimating natural gas reserves commonly referred to as the 'pressure-volume method' and the 'porosity-area method.'

"We find a portion of the Publication of the United States Department of Commerce Bureau of Mines Technical Paper 539 under the title 'Deviation of Natural Gas from Boyle's Law' by T. W. Johnson and W. B. Berwald, devoted to the presentation of theoretical formulas to be used in the application of both of these methods for estimating Gas Reserves (pages 27 to 29 inclusive).

"For the purpose of illustrating the application of both methods for the calculation of natural gas reserves, let us assume that we have been given the problem of determining the reserve for Pool 'A' as of April 1, 1933.

"Four separate and distinct calculations have been made, two by the use of the pressure-volume method and two by the porosity-area method, all four of which result from the application of actual data covering different periods in the life of this field.

"Example One shows the calculation of the reserve by the pressure-volume method as of April 1, 1933, using reservoir pressures and withdrawal data for the period beginning December 1, 1930, and ending April 1, 1933, covering 28 months of the life of the pool.

"Example Two shows the calculation of the reserve by the same method, but using data for the period from January 1, 1932 to April 1, 1933, covering only fifteen months of the life of the pool.

"Example Three shows the calculation of the reserve of this same pool as of April 1, 1933, by the application of the porosity-area method.

Example One
Pool "A"
Calculation of Reserve as of April 1, 1933, by Pressure-Volume Method
Data Period from December 1, 1930, to April 1, 1933

	12-1-30	*4-1-33*	*Estimated Abandonment*
Gauge pressure at surface (Weighted avg.)	765.6	586.4	25.0
Absolute pressure at sand	820.0	631.2	41.4
Deviation factor (Boyle's Law)	1.1328	1.0990	1.0036

$Q = 1{,}202{,}835$ M cu. ft. (2 lbs. base) = Total withdrawal of gas from December 1, 1930, to April 1, 1933

V = Reserve as of April 1, 1933

$$V = 1{,}202{,}835 \times \frac{(631.2 \times 1.0990) - (41.4 \times 1.0036)}{(820.0 \times 1.1328) - (631.2 \times 1.0990)}$$

$V = 3{,}335{,}412$ M cu. ft. (2 lbs. base).

"Example Four shows the result of the application of the porosity-area method to determine the reserve for this pool as of December 1, 1930. From the reserve as of that date was subtracted the actual withdrawal of gas between the dates of December 1, 1930 and April 1, 1933, giving the reserve as of the latter date.

"These calculations when checked against each other show that no one result varies more than 3% from the average. We may be reasonably sure, therefore, that the reserve for this particular field as of April 1, 1933, has been determined within a close approximation of the actual volume which may be produced subsequent to that date.

"In the calculation of the reserves for this pool it was assumed that the wells would be abandoned when the reservoir pressure had declined to 25 lbs. gauge pressure. This conclusion is based upon knowledge of conditions that exist in connection with the operation of the wells, and the allowance is made in order that the result will indicate the volume of gas which is expected to be produced.

"In addition to the allowance for

that quantity of gas which will be left in the reservoir at the abandonment of the field, there should be another deduction for the volume of gas which may be wasted in the future operation of the wells. We have then as a result, the quantity of gas which may be considered as the marketable reserve. After all, it is only the marketable gas which has value in the determination of the relation between gas reserves and market requirements."

Example Two

Pool "A"

Calculation of Reserve as of April 1, 1933, by Pressure-Volume Method
Data Period from January 1, 1932, to April 1, 1933

	1-1-32	*4-1-33*	*Estimated Abandonment*
Gauge pressure at surface (Weighted average)..	666.0	586.4	25.0
Absolute pressure at sand	715.3	631.2	41.4
Deviation factor (Boyle's Law)	1.1138	1.0990	1.0036

Q = 510,766 M cu. ft. (2 lbs. base) = Total withdrawal of gas from January 1, 1932, to April 1, 1933

V = Reserve as of April 1, 1933

$$V = 510{,}766 \times \frac{(631.2 \times 1.0990) - (41.4 \times 1.0036)}{(715.3 \times 1.1138) - (631.2 \times 1.0990)}$$

V = 3,234,170 M cu. ft. (2 lbs. base).

Example Three

Pool "A"

Calculation of Reserve as of April 1, 1933, by Porosity-Area Method

	4-1-33	*Estimated Abandonment*
Gauge pressure at surface (Weighted average).....	586.4	25.0
Absolute pressure at sand	631.2	41.4
Deviation factor (Boyle's Law)	1.0990	1.0036
Temperature factor (Charles' Law) (Reservoir Temperature = 100° F.)	.92857	.92857

Average sand thickness = 14.4 feet
Average porosity of sand = 14.0%
Size of pool = 991.0 acres
V = Reserve as of April 1, 1933

$$V = 991 \times 43{,}560 \times 14.4 \times .14 \times \frac{(631.2 \times 1.0990 \times .92857) - (41.4 \times 1.0036 \times .92857)}{16.4}$$

V = 3,213,617 M cu. ft. (2 lbs. base).

Example Four

Pool "A"

Calculation of Reserve as of December 1, 1930, by Porosity-Area Method

	12-1-30	*Estimated Abandonment*
Gauge pressure at surface (Weighted average).....	765.6	25.0
Absolute pressure at sand	820.0	41.4
Deviation factor (Boyle's Law)	1.1328	1.0036
Temperature factor (Charles' Law) (Reservoir Temperature = 100° F.)	.92857	.92857

Average sand thickness = 14.4 feet
Average porosity = 14.0%
Size of pool = 991.0 acres
V = Reserve as of December 1, 1930

$$V = 991 \times 43{,}560 \times 14.4 \times .14 \times \frac{(820.0 \times 1.1328 \times .92857) - (41.4 \times 1.0036 \times .92857)}{16.4}$$

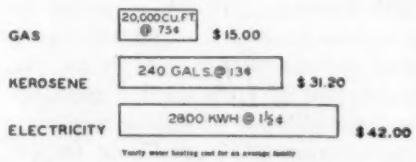
V = 4,372,556 M cu. ft. (2 lbs. base).
Withdrawal of Gas 12-1-30 to 4-1-33 = 1,202,835 M cu. ft.
Reserve as of April 1, 1933 = 4,372,556 — 1,202,835 = 3,169,721 cu. ft.

Comparison of Results

	Reserves as of 4-1-33 M Cu. Ft.	*Variation from Average*
Example One	3,335,412	+ 3.0%
Example Two	3,234,170	— 0.1%
Example Three	3,213,617	— 0.8%
Example Four	3,169,721	— 2.1%
Average	3,238,230	

Selling the Value of Natural Gas

FROM this paper by E. M. Tharp, Vice-President, The Ohio Fuel Gas Company, Columbus, Ohio, the following fuel costs comparisons are given: "Studies were made to determine the cost of performing the various domestic services with natural gas and the most commonly available substitute fuels, such as coal, kerosene, and electricity. Two costs for each fuel were taken into consideration; first, the fuel cost and, secondly, the form cost, which inclues the incidental expenses occasioned by the different types of fuel.



"It was found that 15,000 cu.ft. of natural gas are needed to cook the meals for an average family for one year. Assuming a 75 cent rate per M cu.ft., the natural gas cost would amount to $11.25 per year. The form cost for gas amounted to three eight-hour days for cleaning the range, which, at a dollar a day, added $3.00, bringing the total cost for cooking with gas to $14.25 per year.

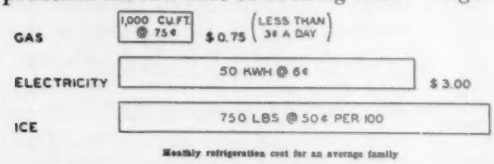
"Kerosene for cooking a year's meals for the average family amounted to 180 gallons, which would cost $23.40 at 13 cents a gallon. To care for a kerosene stove required eight and one-half eight-hour days, or $8.50 form cost, making the total cost for cooking with kerosene $31.90 per year.

"To cook these meals with coal required 2.7 tons. Pricing it at $6.50, the fuel cost would be $17.55. The use of coal, however, involves the largest form cost of any fuel. To clean the stove, build fires, replenish fuel and remove ashes, required 20 eight-hour days out of the year. At a dollar a day, this brought the total cost for coal to $37.55 per year.

"There is required a total of 1440 kw.hr. to do the average family's

cooking with electricity. Since such users buy enough power to entitle them to a rate in the lower brackets, three cents per kw.hr. was used as the average rate. The fuel cost in this case was $43.20 per year. The housewife, cooking with this fuel, needs three eight-hour days of the year to clean her range, which, at a dollar a day, brings the total cost to $46.20.

"It is apparent that cooking with kerosene at $31.90, most closely approaches the low cost of cooking with gas. Statements of many home managers brought out the fact that there was at least $5.00 additional convenience value which they are willing to concede to natural gas as compared with kerosene. If this is added to the annual cost of cooking with kerosene and the total divided by 15, the number of M cu.ft. needed annually to cook with gas, it will be seen that gas is worth $2.50 per M. cu. ft. for cooking as compared with its nearest competitive fuel in cost.

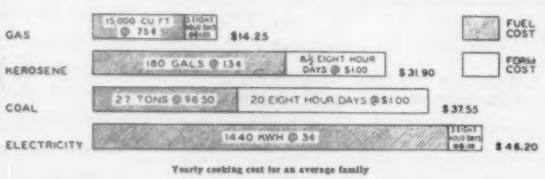


Monthly refrigeration cost for an average family

"If gas is worth $2.50 per M cu.ft. for cooking and costs only 75 cents, it is obvious the customer is making a saving of $1.75 per M. cu.ft. in the rate, and by multiplying this saving by 15 M cu.ft., the quantity used for cooking per year, is saving $26.25 annually. This sustains our slogan, 'Gas doesn't cost—it pays.' It is a language that every customer can understand. It is a proposition he can demonstrate in a very practical way in his own home. When he realizes that the gas company is actually putting money in his pocket by supplying a service at less cost than he can get it elsewhere, he is not so much interested in political agitation. The American consumer does not expect something for nothing and is usually willing to divide a profit.

"The value of gas for refrigeration is probably the easiest to demonstrate. The home-manager knows that about 25 lbs. of ice each day are required to cool an average family refrigerator. This totals 750 lbs. a month and amounts to $3.75 at 50 cents per 100 lbs. Electric refrigerators in the same size consume 50 kw.hr. of electricity a month, which, at a six cent rate, costs $3.00. The average family sized refrigerator operated with natural gas will not consume over one M cu.ft. per month. If it costs $3.00 or $3.75 to do the same job that 1,000 cu.ft. of natural gas will do, surely natural gas is worth that amount for refrigeration. Compare the savings to the user with gas at 75 cents and prove that gas doesn't cost—it pays.

"Natural gas is worth $1.50 per M cu.ft. for water heating. The average family will use 20 M cu.ft per year for this purpose. At 75 cents, it will cost $15.00. To do the same job with kerosene, would require 240 gals, which would cost $31.20 at 13 cents a gallon. Families heating water with electricity, use 2,800 kw.hr. per year, which would cost $42.00, even at the low off-peak rate of 1½ cents per kw.hr. This will not heat as much water as 20 M cu.ft of natural gas, but we have found that families using electricity for this purpose deprive themselves of the full use of hot water, because of the higher cost. If we divide the number of M cu.ft. needed into the cost of heating water with kerosene as the next lowest cost, it is found that natural gas is worth $1.50. The coil through the coal furnace is not regarded as competitive, because it furnishes a restricted hot water service only part of the year.



Yearly cooking cost for an average family

"By similar methods, we can demonstrate that natural gas for space heating, which in our properties will run approximately 30 M cu.ft. per customer per year, is worth 75 cents per M cu.ft as against competitive fuel and form costs. One of the most important elements in establishing a high value conception of natural gas for space heating is its availability or convenience."

Cost of Government—Taxes—Public Utilities

THE TIME has come for the public utilities to be more aggressive than ever in defending their customers and stockholders against the rapidly mounting taxes on gas and electric services, Paul S. Clapp, of New York, vice-president of the Columbia Gas and Electric Corp., declared.

"One reason why the utilities are the focal point of rapidly increasing tax pressures is the widespread and misleading impression that they have not been materially affected by the depression," Mr. Clapp said. "It must be apparent that the reduced activity of industrial plants, the contraction of family units and loss of customers, and the universal economy in every household have caused heavy falling off in the use of gas and electric power.

"The generalization that the utilities have not suffered as severely as other business, is extremely dangerous and harmful, for there is wide variation in the status of individual companies. The taxes on utilities have already reached the level where additional taxes on certain companies would completely wipe out common stock dividends, and in others seriously impair ability to meet preferred dividend requirements. There is obviously a practical limit to the taxes which utilities can stand and that point has now been reached.

Soak The Rich Attitude

"In applying taxes on utilities, legislators often adopt a 'soak the rich' viewpoint. They seldom, if ever, think in terms of the large number of individual investors. They think of these utilities as owned by a few individuals. There are between two and three million investors in the gas and electric utilities alone, and the vast majority of them own stock in small amounts. Dividend payments on these securities to a large number of individuals have become the principal remaining source of income. Nor should it be forgotten that large amounts of utility securities are in the investment portfolios of savings banks and insurance companies, supporting the integrity of insurance policies and savings acounts.

"The utility companies of the country at the moment are between

the upper millstone of increased taxes and higher prices for labor and material, and the nether millstone of pressure for lower rates. Taxes have risen sharply, and there is no let up in the efforts to still further increase them. Materials used on the average have increased 15 to 20% since January and are still pointed upward. Direct increases in labor costs have followed participation in the N.R.A. No one would care to predict where operating expenses, including taxes, will finally lead.

"Rates for service fixed as they are by regulation or ordinance cannot be readily adjusted to meet rising expenses, as is the case with goods and services from unregulated industries. Pressure for rate reductions continues. This is in direct contradiction to the President's request to accept increased costs under the codes. Further, these rate reductions, usually commitments for several years, are requested at a time of greatest uncertainty as to the future. Surely this would appear to be no time to make rate reductions and I say this thinking in terms of the public interest. Adequate, reliable, and constantly progressive public utility service is vital to every community in the nation. The maintenance of investor confidence is essential to provide the necessary capital to insure the future extension and progress of these services."

Cost of Government

The cost of government is of much more pressing importance to the average family than cost of gas or electric service, Mr. Clapp declared.

"The cost of government per family averages about $1.10 per day." he said. "The average electric bill is about nine cents per day; the average gas bill about eleven cents per day. The average daily cost per family for gas and electricity is about 20 cents per day—less than one-fifth of the cost of government. If legislators would focus more of their efforts toward reduction of government expenses, and less toward attacking utility rates, they would render a real and practical relief to their constituents."

Speaking of the "negative" use of taxing power with respect to municipaily owned utilities, Mr. Clapp said: "These enterprises financed by the use of public credit are given a great advantage over privately operated utilities in the tax-exempt character of their credit. Beyond that, municipal utilities pay no taxes. This is discrimination of the highest order against the customers and investors of privately operated utilities, which must compete alongside them. It results in deceptive and misleading statements as to the relative performance of publicly and privately financed utilities."

Mr. Clapp declared that a direct responsibility falls upon utility management to make known to its investors and its customers full information as to the amount of taxes paid, the proportions which these are of the utility bill and the final effect of excessive taxation upon the very service itself.

Gas Plants As Stand-By for Natural Gas Transmission Lines

A DESCRIPTION of an oil gas stand-by equipment is described by Frank Wills, Engineer of Production, Pacific Gas and Electric Company, San Francisco.

"Fig. 1 shows the bricking arrangement of a Jones improved oil gas generator designed for 550 B.t.u. oil gas. The checkers are of 2½ x 4½ x 9 inch brick spaced three inches. Experience indicates that with this arrangement and the refractory material used, this generator can be heated with safety, at a rate of about 0.075 gals. of fuel oil (17° Be) per minute per square foot of cross section from four to five minutes. During the make period when manufacturing 550 B.t.u. oil gas, the primary make chamber could gasify 0.3 gals. per square foot cross section per minute for five minutes while the secondary could gasify oil at about 57% of the rate and quantity of the primary. The usual cycle was about as follows: heat, four minutes; make (oil on) five minutes; blow, four minutes; time for purges and changes, three minutes. The hourly make in the primary and secondary shells for 550 B.t.u. gas was not in proportion to the oil admitted as the higher temperature in the primary caused a considerable production of blue gas in addition to oil gas. The hourly capacity (550 B.t.u. gas) of the primary shell was about 1,000 cu.ft. per sq.ft. and of the secondary about 400 cu.ft. per sq.ft. of cross section. The daily capacities in a few instances were rated on 20 hours' operation but from operating records 22 hours seems more accurate and is more generally accepted.

"When making High B.t.u. Oil Gas (975 B.t.u.) the blow period is eliminated, thus saving about 25% of the cycle. However, the blow period previously used furnished some heat to the checkers and at times only three and one-half minutes blow was required, consequently a saving of about 23% in the time per cycle is a reasonable average figure for general use. With the Hight B.t.u. oil gas, the shutdowns for cleaning the

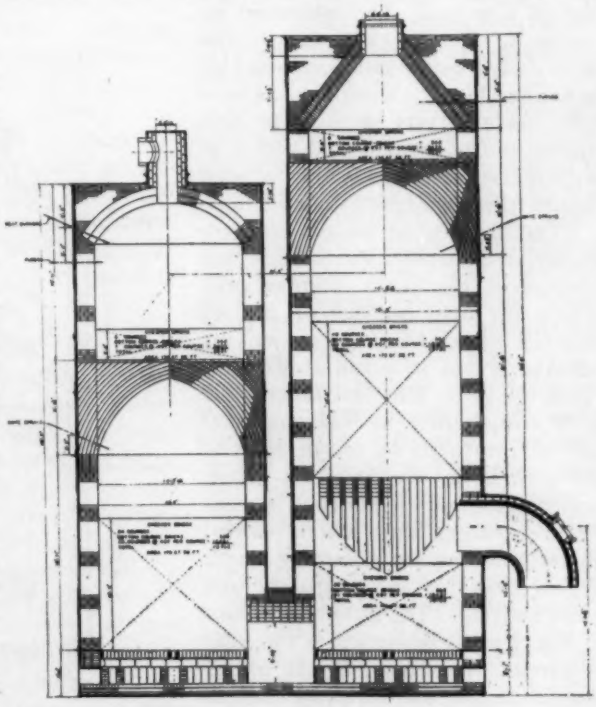


Figure 1

wash box or off-takes are eliminated. Since the stand-by plants are kept in readiness and the period of operation is relatively short there is no reason why the daily capacity for peaks should not be rated upon 24 hours' operation. On this basis the daily capacity of oil gas generators may be expected to increase (23 + 9) or 32% when used for High B.t.u. gas.

"Since with High B.t.u. gas practically no blue gas is formed, there may be a change in the ratio of the gas produced in the primary and secondary make chambers. The heat required in the checkers for the blue gas reaction is much higher than for oil gas, consequently, it might be anticipated, that a like amount of heat may be applied to oil gas and the ratio of oil put into the primary to that into the secondary chamber will be higher than when making 550 B.t.u. gas. A study of heat storage and usage within the generator indicates that the capacity of the checkers to take oil is dependent upon the top three or four courses which receive the oil spray and not upon the total heat stored in all the checkers. It is, therefore, not possible to utilize all of the heat formerly used in the blue gas reaction. The use of a lighter oil permits a greater number of gallons and possibly some greater weight per square foot per minute and converts a greater per cent of the oil into gas. The estimated increase in capacity (23% hourly and 32% daily) seems conservative. This is verified by such short tests as have been made. Tests show 25 to 30% higher hourly capacity. Whether or not the tests are reliable, they at least justify the assumptions made.

"The capacity of an oil gas generator is controlled by the few top courses of the make chamber only where the total number of courses between the make chamber and the off-take is not so great as to overcrack the gas. This is a function of both temperature and contact and can be controlled by temperature if the path is not too long. It is expected, with more experience in making the new gas, more will be learned about the maximum allowable length of checkers for high capacity and quick starting. The generator shown in Fig. 1 must be cooled at the lower part of the primary by the use of steam. Steam was formerly used at this point regularly and usually produced some blue gas. In order to avoid the necessity for such cooling with the present gas it is planned to follow the principle of adding capacity by using more make chambers in the primary shell.

"This idea is not new. C. A. Rice used this scheme on a small generator in Chico, California, years ago. Fig. 2 shows the bricking arrangement of an oil gas generator designed to take advantage of this principle on a larger scale. It was erected at Vallejo, November 15, 1929, for the manufacture of 550 B.t.u. oil gas and operated only 14 months, during which time natural gas was being brought into other parts of the system. Because of activities connected with the change over, no detailed studies were made of its performance. Such observations as were made revealed that the extra chamber caused a capacity increase of about 25% and a saving of oil per M cu.ft.

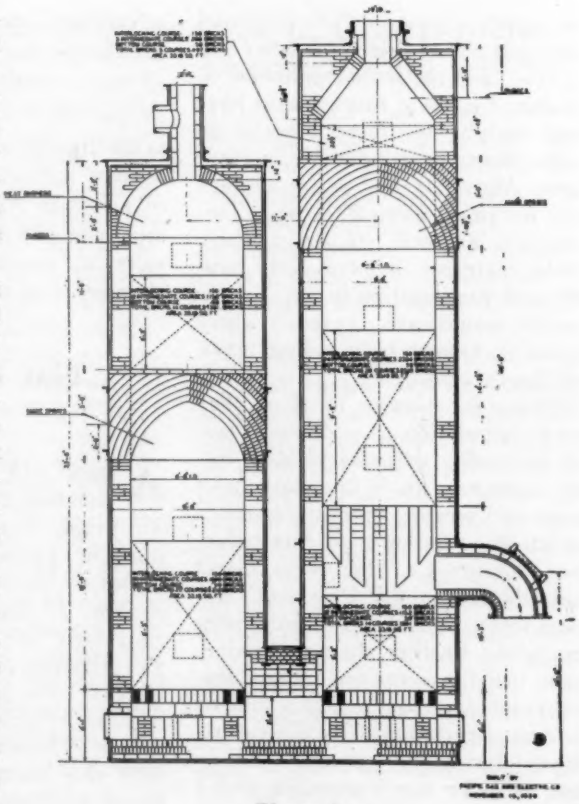


Figure 2

"Following the same reasoning regarding capacity, backed by the experience at Vallejo, a similar effect should be obtained with such alterations applied to a stand-by plant for High B.t.u. Gas Fig. 3 shows a generator of the type shown in Fig. 1 that has been modified for High B.t.u. Gas but which has not as yet been operated. Its design is a bit more to the extreme than that shown in Fig. 2. With this modification, it is expected that the capacity of this generator will be increased and additional 25% at least, bringing its daily capacity for High B.t.u. Gas to 157% of the capacity formerly obtained with 550 B.t.u. oil gas."

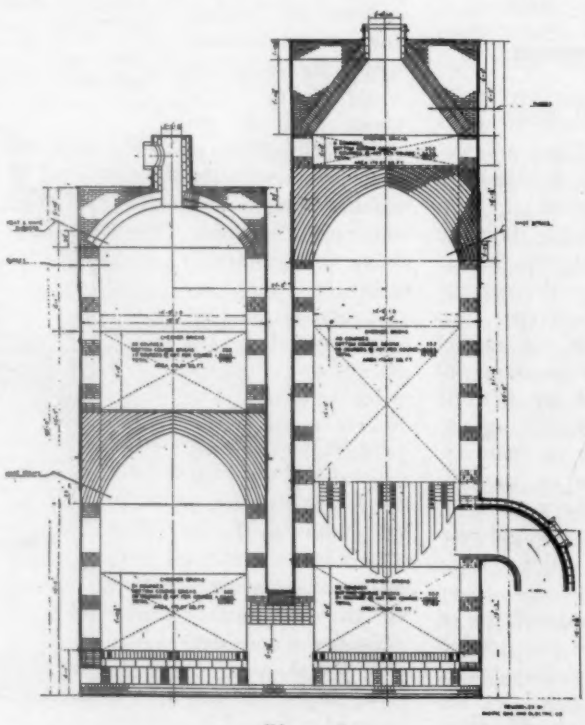


Figure 3

Technical Section

Research Accomplishment

OF GENERAL interest to all technical men was the report made by F. C. Weber, Vice-President, The Brooklyn Union Gas Company, Brooklyn, N. Y., on "The Industry's Achievements in Research." A review of the work done by the Technical Section along these lines from 1923 to date was given. The first problem undertaken was probably on the carbonization of coal by Prof. D. J. Demarest in Ohio State University and much research has been carried out along these lines ever since. Deposits in meters and piping was another important research problem, undertaken originally in 1923. Gas mixing and soil corrosion also received considerable attention. Distribution problems were also investigated. To quote from Mr. Weber's address:

Effects of High Pressure

"The trend toward higher pressures in distribution systems, together with the earth vibrations resulting from the extensive use of heavy trucks during the past decade, gave rise to the necessity for improvement in pipe joints. In 1929 there was undertaken under the sponsorship of the Distribution Committee of the Technical Section, a program which is still continued on an extensive scale. Most of the work has been conducted at the Cleveland Laboratory and under the direction of Mr. K. R. Knapp and with the guidance of a Committee on Pipe Joints, of which there have been several chairmen. In these researches Mr. Knapp has had the copoeration of the manufacturers of mechanical joints. The gas industry has today, available through the reports prepared by Mr. Knapp and others, very conclusive information regarding the merits of various types of joints and joint materials, under various conditions of service. It is obvious that the reduction in leakage and the elimination of hazards yield a return on the effort and expense concerned with this project.

"A logical outcome of the study of pipe joints was the desire to secure some basic information on the testing of welded joints in the field. The Association's Laboratory has done considerable work in the development of a device which involves the use of a modified flux meter in conjunction with an electro-magnet. This instrument will indicate accurately the character of any kind of welded pipe joint. The device is not yet in a state of final perfection but no doubt will be before long."

Mr. Weber also called attention to the research work done on industrial gas applications. He said that the Cleveland laboratory is undertaking a number of highly technical investigations.

"One of these is the combustion space requirements research for high and medium temperature furnaces. Previous to these researches many industrial installations had been made without due consideration of the actual gas burning capacity of the combustion spaces. Other factors that were considered to be important were reckoned with but the study in the laboratory indicated that gas burning capacities are of the utmost importance and may be very substantially increased where proper burning equipment is used, furnace pressures are properly controlled and the venting arrangement is satisfactory. Information on the effect of operating with reducing and oxidizing atmospheres also was secured. This study has supplied scientific information of very great value to engineers in designing new industrial equipment.

Study of Burner Noise

A study of burner noise elimination was also conduced and bulletins presenting the findings have been made available. The characteristics of burning gas with preheated air have been thoroughly investigated. A bulletin on this subject has become so popular that it is being employed by many universities as a text-book and as a hand-book by many of the manufacturers and industrial gas engineers."

In conclusion he claimed that "to

O. S. Hagerman
Chairman-Elect, Technical Section

date every highly important problem that has presented itself in any phase of the gas industry as typified by the several sections of the Association, has been given suitable consideration."

Emergency Substitute For Natural Gas

INTERESTING experiments were described in a report by E. L. Fischer on the manufacture of a high B.T.U. gas in a standard water gas set to serve as an emergency substitute for natural gas or for mixing with natural gas during peak loads. The following conclusions were arrived at on this important and timely subject.

1. "Gas can be made in a standard carburetted water gas set without changes of any kind, which will serve as a substitute for natural gas and will burn satisfactorily in any appliance properly adjusted for natural gas without changing the adjustment of the appliance, either when mixed with natural gas in any proportions or when substituted 100%.

2. "A satisfactory substitute for natural gas must contain not more than 35% by volume of combined carbon monoxide and hydrogen and with these percentages must either

(a) have approximately the same B.t.u. value and specific gravity as the natural gas, or

(b) the heating value may be less than that of the natural gas if the specific gravity is sufficiently lower than approximately the same B.t.u. deliv-

ery per hour through the burner orifice results.

"If a gas with a lower combined percentage of hydrogen and carbon monoxide is produced, then the heating value may be lowered provided the specific gravity is not greatly increased.

3. "The temperature of gases leaving the set is the best indicator of the quality of the gas being produced. When making straight oil gas, this temperature variation is the only means of controlling B.t.u. and quality. The temperature of the gases leaving the set is the result of three possible variables, viz.: temperature of brick at bottom of superheater, rate of oil input, and rate of steam input. For a given rate of oil and steam per minute definite relations will be found between the temperature of the outlet gas and the temperature at the bottom of the superheater. Once this relation has been established and the desired outlet gas temperature determined for the particular quality of gas desired and for the particular oil used, very constant results can be obtained by operation on this temperature time cycle:

(a) Blast of sufficient length that the temperature at the bottom of the superheater reaches the desired maximum.

(b) A run of definite time period with definite rate of oil and steam allowing time for steam purge after shutting off oil.

4. "In making carburetted blue gas it is advisable to follow the same procedure as to cycle and temperatures as for straight oil gas although a constant B.t.u. of gas can be made by varying the blue gas—oil gas ratio.

Constant B.t.u. value, however, is not in itself sufficient as the constituents of the gas are also important. The best operation as to constancy of gas is obtained by constant gas outlet temperature and it is recommended that the temperature—time cycle be followed for this method also. It is necessary to determine the proper temperature of the outlet gas for each machine and each grade of oil. This temperature should be the highest temperature that can be used without lamp black production: in other words, the maximum cracking obtainable for the particular oil used without hydrogen production. This should give maximum oil efficiency, maximum methane production and minimum production of illuminants possible without hydrogen production.

5. "Proper operation will require two pyrometers, one located at the bottom of the superheater and one in the connection between outlet of superheater and washbox. For best results a two pen recording pyrometer showing the temperature at both points is recommended.

6. "For blue gas-oil gas mix no changes of any kind are required to the set unless for a particular plant it is found that the oil spray and pumps are too small to supply the required rate of oil flow, or other changes.

7. "For the production of straight oil gas it will be necessary to provide means for keeping the offtake pipe and washbox clear of lamp black if continuous operation is to be maintained as during the tests there was an accumulation of lamp black sufficient to force shutdown after about five hours run. The effect on this condition when using gas oil was not determined.

8. "Straight oil gas can be substituted successfully with lower B.t.u. values than blue gas—oil gas mix because of the lower specific gravity and lower percentage of illuminants.

9. "Results of tests indicate that the reduction in B.t.u. value due to compression and cooling is about the same for the two gases.

10. "The capacity of the set when making straight oil gas (assuming provisions for disposal of lamp black as mentioned above are made) is approximately 9% less (on a volume basis) than the capacity of the set when using coal and producing 600 B.t.u. carburetted blue gas.

11. "The capacity of the set when making blue gas-oil gas mix of approximtely 1,050 B.t.u. is approximately 3½% greater than the set capacity when producing 600 B.t.u. carburetted blue gas.

"Both of the above are based on using fuel oil for the high B.t.u. gas and gas oil for the 600 B.t.u. gas.

12. "It is believed that higher capacities may be realized with either method of operation when using gas oil instead of fuel oil.

13. "In the Appendix are shown analyses of the raw materials used with both methods, also analysis of tars and condensates recovered."

Liquid Purification

THE report on the progress made in liquid purification, prepared by F. Denig and A. R. Powell, The Koppers Research Corporation, Pittsburgh, Pa., after starting with a brief history entered into a detailed discussion of the principles and trends involved in the further improvement of liquid purification. This included description of various methods used for the actification or revivification of solutions used in the process, including the use of sweep gas, oxidation by air, hot actification, vacuum actification and electrolytic actification. The most recent trends at the present time are air oxidation in the pressure thionizer for the recovery of sulphur, and hot actification by steam for the recovery of sulphuretted hydrogen gas. After analyzing the various costs involved in the liquid purification plant, the requirements of the ideal process were stated as follows:

1. "The plant should be simple in design and substantially automatic.
2. "The process should not be unduly complicated and should involve as few operations as possible. Technical control required should be a minimum.
3. "The reagent used should be low in price and readily available.
4. "Solution circulation rate should be low, consistent with other factors.
5. "Actification should involve the minimum amount of power or steam.
6. "There should be recovery of the sulphur as brimstone or possibly as hydrogen sulphide for the purpose of manufacturing sulphuric acid. It is preferable to have sulphur recovery so that either brimstone or agricultural sulphur might be produced, depending on relative market conditions."

Various new developments in liquid purification processes were discussed, including the phenolate process, the flow sheet of which is shown in figure 1. The operation of this process is as follows:

"The foul solution from the absorber is preheated in the heat exchanger by the hot actified solution and then flows into the actifier. In the actifier the hydrogen sulphide is swept out by steam provided by the boiling solution in the bottom of the actifier, which is heated by indirect

steam. The steam and some phenol leaving the top of the actifier are returned to the solution by a reflux condenser, leaving the hydrogen sulphide in substantially pure form for the production of sulphuric acid, etc.

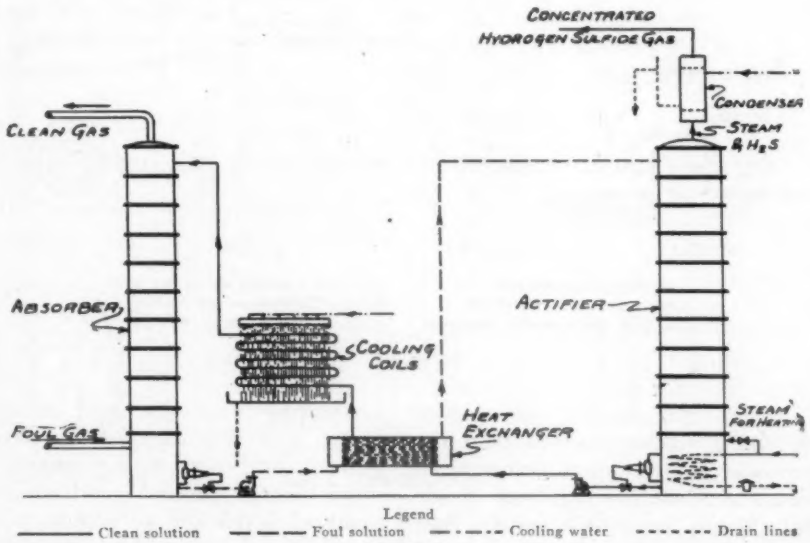


Figure 1

"The actified solution leaving the bottom of the actifier tower gives off a portion of its heat to the foul solution in the heat exchanger, is further cooled in cooling coils, and then flows into the top of the absorber to again begin the circuit.

"The first practical trials of the Phenolate process were made about two years ago at the liquid-purification plant of the Indiana By-Product Gas Company, East Chicago, Indiana. The gas used in these trials was refinery-still gas under an average pressure of 36 or 37 pounds per square inch and containing 2,000 grains H_2S or less per 100 cu. ft. (standard conditions). It was found that purification of better than 99 per cent could be easily obtained, although it was more economical to operate at 90% removal in the single-stage absorber. Since this plant handled between 600,000 cu.ft. and 1,200,000 cu.ft. of gas per day, the data are reliable and representative of full commercial operation."

The Koppers modified (ammonia) Thylox process was also described, wherein the alkaline material supplied to the solution is ammonia instead of the usual sodium carbonate.

The Gum Problem

AS USUAL, the report on recent development in the Gum Problem, made by W. H. Fulweiler, The United Gas Improvement Co., Philadelphia, Pa., was replete with detailed information on the subject. One of the achievements of the Committee was the development of a satisfactory method for the determination of NO in gas and a very sensitive test was also worked out for the detection of vapor phase gum even in minute quantities. The report said in part:

"We find that vapor phase gum is not confined to coal gas or mixed gas plants, as water gas plants may produce very large quantities of vapor phase gum.

"There is probably no safe lower limit for the amount of NO which may be in the gas leaving the plant. It should be completely removed for assurance against possible trouble.

"Plant operation has shown that it is possible to practically eliminate NO from the gas by proper purifier manipulation.

"These in brief are the more important results that have been obtained during the past year. We have, of course, continued our study on a great many of the details of the problem but the constitution and the mechanism of the formation of the gum itself is still unsolved.

"In addition to the purely chemical side of the investigation, a great deal of work has been carried on looking to a study of the factors involved in the actual stoppage in the distribution system.

"The effect of aging the gas on the formation of gum particles in the gas has been studied and an incidental feature of this work has been the development of pilots which do not stop up.

"NO tests have been made throughout a number of large plants and we have given particular attention to the variation in the amount of NO from hour to hour. These results have been very interesting as indicating the difficulty of drawing conclusions from single tests.

"The flywheel effect of the distribution system on the NO content of the gas has been investigated."

Meter Diaphragms

A PAPER was read on this subject by Lyman M. Van der Pyl of the Pittsburgh Equitable Meter Co. A number of subjects were discussed of which perhaps the most interesting was on the effect of tetralin, a newly proposed agent for removing naphthalene from gas, on meter diaphragms. Mr. Van der Pyl had the following to say on this point:

"Tetralin is being used to some extent in this country to remove and prevent naphthalene deposits in manufactured gas lines. In addition, it has been recommended as a solvent for gums and as a fogging medium. However, it is not our purpose to discuss its uses except as they affect meter diaphragms. Since it was used in Europe for some time before it was introduced to this country, practically all of our data are derived from foreign sources.

"Weissenberger, Deutsch, Pohle, Schuster and Blackall refer to a favorable effect of tetralin on diaphragms, while Knublauch and Schairer speak of detrimental effects on diaphragms. The two viewpoints, however, are easily reconciled.

"Whether or not the tetralin added to manufactured gas is sufficient to saturate it, the tetralin, together with the drip oil, will gradually replace the dressings originally present in meter diaphragms. Under the usual conditions there should be no great difference in the action of meters from that ordinarily observed over the different seasons of the year in the case when the diaphragm dress-

ings have been replaced by drip oil alone. If the drip oil contains gum-forming constituents, the presence of tetralin will aid the other solvents in the drip oil in preventing their formation and in dissolving old deposits. This will explain the statements as to the favorable effect of tetralin on meter diaphragms.

"If the tetralin is used to fog natural gas or any other dry gas, here again it will replace the original diaphragm dressings. If the diaphragms remain saturated with tetralin, here also there should be no great difference in the action of meters. But if the gas becomes unsaturated with tetralin, tetralin will evaporate in a very short time from the diaphragms and leave them dry, harder and weaker, and susceptible to any injurious effects that may be present to be absorbed. This is the detrimental effect of tetralin, adapted to American conditions from the writings that have been noted.

"In summary, the use of tetralin in manufactured gas lines will increase to a slight extent the effect of drip oil on meters, while if it is used in lines carrying dry gas, such use must be continuous to prevent the diaphragms from drying out."

Gas Production

THE Committee report on gas production contained a number of interesting and important papers. Of more than ordinary interest was the paper on the use of mixed producer and natural gas for underfiring by Charles R. Locke of the Chicago By-Product Coke Company. The system of piping used is shown in figure 1. Quoting from this paper:

"The natural gas is fed from a 6" high-pressure line through an Emco regulator in which the pressure is reduced to approximately 60" of water, through a Connersville meter to the coal gas oven holder. From the holder it passes through the 30" oven fuel gas line and is taken from there through a 12" line to the mixing tee where it is mixed with producer gas coming from the producer gas holder. The amounts of both the producer gas and natural gas are hand controlled by valves at this point. The mixed, or pro-natural gas, leaves the mixing tee in a 20" line which is connected into the 30" fuel gas main, a divisional valve separating it from the natural gas. From this point, the pro-natural gas is handled through the coal gas underfiring system.

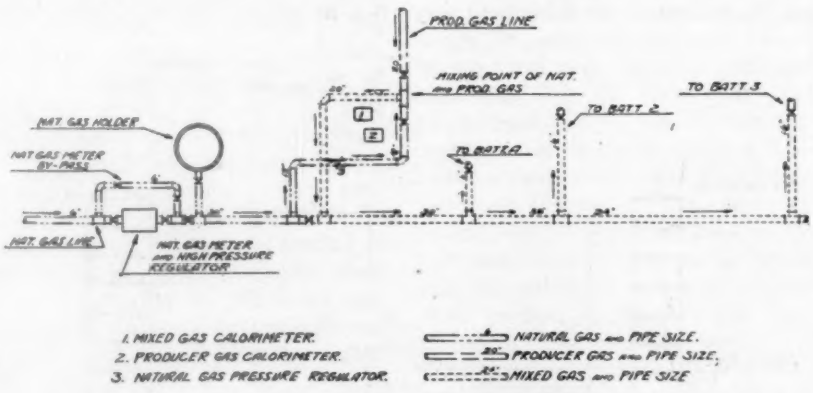

PROD. GAS LINE
MIXING POINT OF NAT. and PROD. GAS
TO BATT. 3
TO BATT. 2
TO BATT. 1
NAT. GAS HOLDER
NAT. GAS METER BY-PASS
NAT. GAS LINE
NAT. GAS METER and HIGH PRESSURE REGULATOR
1. MIXED GAS CALORIMETER.
2. PRODUCER GAS CALORIMETER.
3. NATURAL GAS PRESSURE REGULATOR.
NATURAL GAS and PIPE SIZE.
PRODUCER GAS and PIPE SIZE.
MIXED GAS and PIPE SIZE

Figure 1

"Since the natural gas holder throws 3" more pressure than the producer holder, it was necessary to install a Shallcross regulator in the natural gas line which holds a balanced pressure between the natural and producer gases. This is particularly important at reversals to prevent the natural gas from backing into the producer main and upsetting the mixture to a large degree."

Various operating conditions involved in using this mixed fuel for underfiring were discussed in the report and disadvantages involved were pointed out, as for example closer control required, good adjustments of drafts and air supply, pipe trouble from dirt and tar deposits, but in main the use of the mixed gas has proven satisfactory for underfiring coke ovens.

Non-Stop Pilot Control

A VERY interesting paper was read by E. J. Brady of the United Gas Improvement Co., Philadelphia, Pa., on the development of non-stop pilot control. Mr. Brady called attention to the really great importance of that relatively insignificant part of the gas-burning appliance, the pilot. He said that within recent years many complaints have been received by gas companies regarding the pilot lights on various appliances. It was found that the stoppages of the lights was caused by the deposition of resin or gum-like material on the needle valve.

"These vapor-phase gums, so called because of the reaction of which they are a product takes place within the gas itself and not necessarily at the point of manufacture, are not at all harmful in so far as the quality of the gas is concerned. They pass through the mains and meters and are consumed in the flame where they furnish their modicum of heat along with the other hydrocarbons. Their greatest and perhaps their only offense is the stoppage of the flow of gas through thermostatistically controlled valves and other places where the gas passage is constricted, but principally pilots, and the reliability of these pilots is of such vital importance that failure to eliminate this fault will restrict the gas industry to an antiquated type of service in the household, making it very difficult if not impossible for it to compete with rival forms of energy."

The design of the pilot light was discussed and it was pointed out that "the use of a small cock or screw-controlled needle valve to introduce resistance to the flow and reduce it to an economical point, was a mistake and that all of the resistance should be in the tube itself, the necessary resistance being obtained by making the tube smaller in diameter and relatively long. The length of the tube, we have found experimentally, may be four or five hundred times as great as the diameter. Pilots making use of this principle will not stop up with gum.

"The object of the present paper is to describe in some detail the development of pilot controls based on the above described principle. Before doing so, however, it will be necessary to mention the physical facts in so far as we know them at the pres-

ent time in connection with the formation, number, size and growth of vapor-phase gum particles in gas. These will be described but briefly."

The author described the various experiments carried out in the development of the new form of pilot control. The limitations of the capillary tube were discussed and because of these limitations,

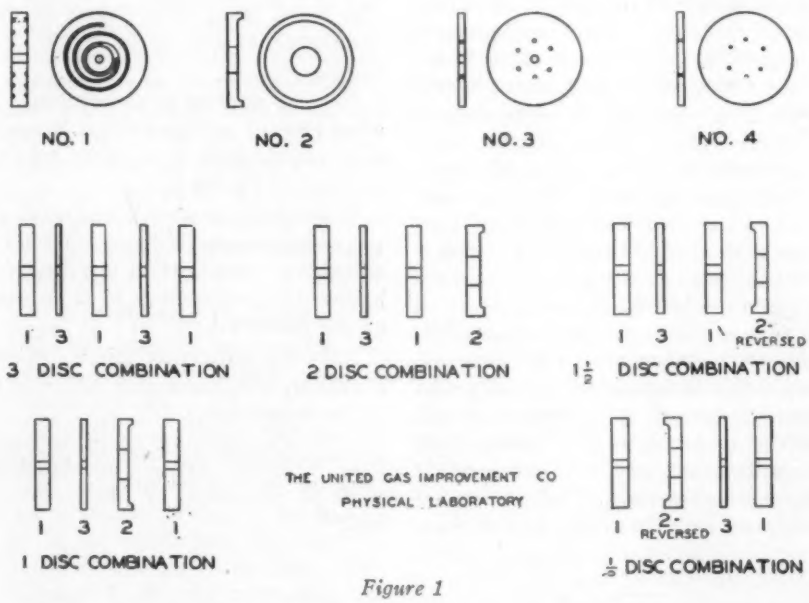


Figure 1

"In view of the above limitation of the capillary tube, we put forth most of our efforts on the development of other forms of the control, principally to a form consisting of a grooved disc, and it was with this latter form that we discovered the importance of having the inside of the groove smooth. This form consists of one or more discs of metal, preferably aluminum, with a scroll or spiral groove on each face. This form not only makes feasible the production of a smooth groove, but by manipualting two or three of these grooved discs, held together by a union-type casing in a manner which will be described shortly, the effective length of the groove, and therefore the flow, can be altered on the job. Fig. No. 3 shows at the top a diagrammatic sketch of the discs which enter into the various combinations shown below on the same sketch. In this type the gas for the pilot only enters the control through a hole in the casing, which registers with an annular groove on the inner side of the first disc. This small hole in the casing may be seen in Fig. No. 6. From here the gas makes its way outward through the spiral groove, which terminates at a hole near the edge, communicating with the outer end of a similar groove on the far side of the disc, thence it passes inward to another annular groove near the center. Several of these discs may be used in series, provided a plain disc of the type shown at No. 3 in Fig. No. 3 is placed between the grooved discs. Another plain disc (No. 2) of the same thickness as the grooved disc, but with one side recessed as shown, is provided. This is a by-passing disc, and by reversing its sides and changing its position relative to the grooved discs, as shown in the combinations illustrated, various amounts of resistance in units of one-half a disc can be made up. In this assembly the gas to the pilot flame does not pass through the comparatively large central hole at all, except in the case of those discs which have been by-passed. This central hole provides a passage for the relatively large flow of gas to the torch flame when the button is pressed. Discs No. 3 and No. 4 (Fig. No. 3) are made of very thin material, and other holes can be made part way out on the radius with a small ticket punch, thus making it possible to get any intermediate flow in smaller fractions of a disc than one-half."

A considerable portion of this paper was devoted to a discussion of the application of the principle wherein the long, smooth, groove is in the form of a spiral on a disc. Many other applications are possible in addition to those described. In concluding his report, Mr. Brady said:

"Although the present paper deals mainly with the capillary groove-type control, the experimental work performed was not confined to this type only. Many different kinds of pilot controls were compared on treated gas, including adjustable orifices, orifices through thin plates, a very small hole through the body of the cock of the present push-button control, and finally, filters made of various materials in various combinations. None of these methods were successful. In regard to filters, the gum particles cannot under ordinary conditions of pressure and flow be filtered out of the gas. A filter that is porous enough to pass the gas without undue loss of pressure will not remove the particles. On the other hand, a filter that is fine enough to remove the gum requires too much pressure and will ultimately stop up, requiring either cleaning or replacement. One combination would be a considerable improvement over the ordinary needle valve, but even in this case it did not approach the life of the grooved pilot control.

"In conclusion we may say that, notwithstanding the many forms these controls may assume, we have as the basis of all of them a principle that should prove invaluable to the gas industry, making possible a pilot flame that will burn indefinitely without attention and one which will make the operation of the modern gas appliance as reliable as the supply of gas itself. We all know that the tradition mentioned in the opening paragraph of this paper has been well founded and that such reliability has been from the very beginning of the industry nearly perfect."

Chemical Activities

THE report of the Chemical Committee was made by E. J. Murphy, Chairman, The Brooklyn Union Gas Co., Brooklyn, N. Y. One interesting portion of this report was concerned with the use of tetralin for the removal of naphthalene from gas, the investigation being along theoretical lines to determine the required amount of tetralin for this purpose. The conclusion reached

was that tetralin is an entirely satisfactory agent for removing and preventing naphthalene deposits. The major portion of the report was devoted to a discussion of unit processes in chemical engineering of interest to the gas industry by L. Logan, The Johns Hopkins University, Baltimore, Md.

Distribution

METERS, meter diaphragms, pipe coatings and corrosion, and cast iron pipe standards were discussed in the Committee Report on Distribution. The meter report was made by C. H. Stevick, Consolidated Gas Co., New York City. The report was on seven different questions as follows:

1. "Tolerance allowance in adjustment of outgoing meters.

2. "Bringing to date the use of semi-chrome tanned leather in diaphragms.

3. "Necessary 'ageing' or 'curing' period following the oiling of new diaphragms.

4. "Present status on the use of direct reading indexes.

5. "Method of computing meter error.

6. "Continuation of the research work on diaphragm dressings.

7. "Consideration of the question of the measurement of large volumes of gas."

In answer to the first question, it was concluded that there is no reason for a departure from the universal practice in the adoption of rules for the adjustment of gas meters. It was felt that the use of semi-chrome tanned leather might benefit some companies having trouble with meter diaphragms, although no recommendation was made. The necessary curing period following oiling of new diaphragms was reported to vary from a minimum of three weeks to a maximum of three months, depending on various conditions. Research work has been started on this problem. Companies have reported themselves to be uniformly enthusiastic regarding the use of direct reading indexes on meters. The Committee reserved any statement on the sixth question until next year. No report was made on the last question.

Pipe Coatings and Corrosion

THE report on this subject was made by George H. Boyd, Consolidated Gas Co., New York City. The work being undertaken by the committee to-date includes the following:

"(1) A method of determining in what type of soil protection is needed. (Investigation is being carried on by Dr. Ewing.)

"(2) Protection of house services. (A questionnaire is being circulated among the members to acquire preliminary information as to the nature of the failures.)

"(3) Cathodic protection. (Conducted by Mr. Kuhn who will report to the committee.)

"(4) Cement and concrete coatings. (Data being accumulated through members of the committee.)"

Industrial Gas Section

The Changing Aspect in a Competitive Market for Industrial Fuels

MR. Henry O. Loebell, Vice President and General Manager, Combustion Utilities Company, stated very clearly the problems which the gas industry faces at the present time and went on to indicate the proper methods for solving the same.

At the start Mr. Loebell said in substance that regardless of how the various political-economic experiments turn out, there exist certain trends in industry which will have an important bearing on our business. He stated that production has now caught up with consumption and the present aim in all quarters is to increase consumption. Cautioning that we can no longer ignore this truth, he warned that "if we are to live, regardless of the conditions under which we will live, we must recognize this fundamental change in our economic lives and concentrate our efforts on solving the problem which this change brings to the fore.

"We, in the gas business, are essentially engaged in supplying the market for heat. Heat is a fundamental requirement of man in his home and in his industry. Hence, the market for our product will continue to exist, regardless of what the future may hold. But whether or not we continue to serve any portion of that market is strictly dependent upon how you and I conduct our business in the immediate future and also upon whether the new economic-political philosophy raises the standards of living of the average man."

F. B. Jones
Chairman-Elect, Industrial Gas Section

Declaring that our industry has in the past several years been placed in a defensive position as regards rates and value of service, its best defensive weapon, sales and service contacts, has been weakened, and "as never before, the customer demands attention and must be sold on the

values for which he pays—not by legal rights and court decisions but by service and personal contact."

Mr. Loebell noted that before preparing this paper he asked some fifty prominent men in the gas industry whether gas could demand a premium on a B.t.u. basis. Almost to a man the answer was "yes".

He noted that while to date gas has enjoyed a part in the field of gas utilization due to cleanliness, ease of control and automatic application, competitive fuels were increasingly reducing the value of such premium. "And the end is not yet in sight." In this connection, he brought out that butane had nullified many of the good points of gas utilization and were virtually on the same plane with gas.

Our Present Position

"The summary of our present position," he said, "regarding competition is as follows:

"In the past we have sold gas at rates higher per B.t.u. than petroleum or coal products because we secured better utilization values from gas.

1. In the recent past, the prices of the competing fuels have been reduced, thereby increasing the spread between gas and competing fuels.
2. In the last few years the improvement in utilization of competing fuels has been greater than the relative improvement in gas utilization and, therefore, the spread in value has been further increased.
3. At the time when sales activities of competing fuels have been stimulated by these advantages, the gas utilities have retrenched in both sales and development."

Examining the above factors, he declared that coal, oil and butane due to such points as better selection of materials, decreased costs and perfecting of utilization, had made the struggle for markets more intense.

"The problem, therefore, of retaining and increasing sales depends upon the answer to the following questions:

1. Is the trend in competing fuels going to be toward higher price levels?
2. Can the gas industry reduce its costs and rates?
3. Can we increase the values of gas to the user?
   a. By better utilization;
   b. By better service;
   c. By better selling.

"Upon the proper answer to these questions depends our ability to develop our business."

With reference to price trends, Mr. Loebell was of the opinion that, generally, the levels for coal and petroleum were upward but he said that aside from the relative position in the price between gas and competing fuels, a good opportunity was offered to sell customers on the value of gas and its constantly reduced level of price, on the efficiency of utilization equipment and generally superior engineering assistance supplied by the gas industry.

The price trend for butane is not so clear, but in any event, "if the ultimate price of butane enables it to compete with manufactured gas, the only hope of maintaining the market lies in reducing our production costs or by introducing natural gas."

Concerning the likelihood of our being able to reduce gas costs, he noted that we would have to give serious consideration to such matters of improving gas production costs, distribution pressure, improve load factors and in fact, study every item in our setup to the end that we must answer affirmatively the question, can the gas company reduce its costs and therefore its rates?

The natural gas industry is also advised to proceed along similar lines and to tackle the problem immediately.

Loads Must Be Studied

Mr. Loebell particularly emphasized the need for closely studying certain loads and adjusting rates to get the most business. After all of these factors have been studied by the manufactured gas industry, "when you have reached the irreducible minimum in production costs and still find yourself the target for competitive attacks, natural gas alone will offer you the means of saving your business."

He especially drove home the point of increasing the value of gas to the user, saying:

"Undoubtedly, the greatest opportunity open to the gas industry lies in this direction. Success in this way is a two-edged sword which justifies prices on one hand and reduces costs with increased volume on the other.

"There are three ways to accomplish this end:

A. By better utilization;
B. By better service;
C. By better selling."

Regarding these three items he advised gas men to increasingly acquaint themselves with prospects' heating requirements and study out the best plan for taking care of the same. Further, he brought out the need for close cooperation between gas companies and those appliance manufacturers who are doing a real job as regards research.

Better Customer Contacts

Better customer contacts, he noted, would increase the value of gas service. In line with increasing the value of gas by better selling he brought out that "in the final analysis our problem reverts to one of sales. Say what you will, ignore it as you please, the fundamental problem of the gas business is a sales problem.

"The gas industry has never been *sales-minded*. Its executives are financiers, attorneys, or engineers who have depended upon pure economies to support their position. So long as we were without *serious competition*, this was possible. But it is *possible no longer*.

"The *pressure of competition is even now being felt*. In the future it will grow increasingly stronger. Our only answer is to perfect our economies first and then sell our product.

"The responsibility of the sales department *was never greater*. It has two problems.

"The first of these relates to its *internal sales program*. As before stated, most executives do not sympathize with sales problems. They think of sales programs as having something to do with appliances or load building. They endure the sales department as a necessary evil.

"It is up to the executive to change this attitude. He must recognize that a sales department is not a mere dispenser of stoves and burners. He must see that it is the one contact he has between himself and his customers. He must realize that his salesmen are merely the reflection of his personal opinion of his customers and if these salesmen are dull, unintelligent and lacking in initiative, so will his customers believe the man-

agement to be. But if they are alert, pleasant, courteous and convincing, his customers will assume they are but typical of their officials.

"This means that management must insist upon capable salesmen and then must pay them well. They must be happy and enthused with their opportunity. This again means they must be delegated authority and given responsibility. No good man will continue to be a highly-paid office boy indefinitely. If salesmen are incompetent to make sales decisions, they are incompetent to remain on the pay roll. No management is so all-wise that it knows everything about all phases of the business. Hence, a management which is experienced in finance, law or engineering is no more capable of making sales decisions than is the sales department capable of solving legal, financial, or engineering problems. The quicker management recognizes this fact and places independent responsibility upon the sales department, the quicker our industry will be to realize on its possibilities.

"It is imperative that the sales department help the management in recognizing the problems peculiar to it by emphasizing these psychological factors of human behavior which are a part of the sales job, but are cast aside in the exercise of financial and engineering tasks.

A Second Sales Problem

"The second sales problem relates to the job of customer sales. Here the gas industry is woefully inequipped. Successful as have been individual appliance campaigns, the gas industry as a whole is not experienced in mass selling. Yet mass selling will be the keynote of the next era of prosperity.

"By mass selling I do not mean high-pressure salesmanship. High pressure salesmanship has no place in a business which is dependent upon recurring sales and permanent satisfaction.

"By mass selling I do not mean the combining of every element essential to successful sales in one gigantic over-all plan and then pursuing this policy to a pre-determined goal, whether it requires five weeks or five years. Our competitors will use this tool. We have seen it worked to a limited extent by the oil burner people in the sale of range burners as well as house heating burners; we have seen it worked by the several refrigerator companies and, two years ago, the electric industry was just getting ready to launch a mass range-selling campaign when the depression postponed it. These sales efforts will be started by our competitors sooner or later. They must be started. And again, I must repeat that an offensive drive on our part is the best defense we have.

"The gas industry must accept and use the ideas of mass selling because every industry and every corporation which continues to live will have to accept it. It is the only means by which corporations will be able to survive in the intense drive for business which will characterize the immediate future. Both industry and government are in agreement that this country must wait no longer for prosperity to return. Instead we must go out and bring it back by our own efforts. And this means that mass selling will be the dominating activity of the next few years."

WHO ORIGINATED THE TERM "B.t.u."?

What is the origin of the term, "British thermal unit"?

No one knows, it appears, not even the gas men, and they have been making and selling B.t.u.'s in this country since 1816 and in England since 1812.

Joseph A. Conforti, assistant librarian of The Peoples Gas Light & Coke Company, Chicago, reported to the convention of the American Gas Association that several years' effort to trace the origin of British thermal unit had met with failure.

Having exhausted all sources in this country, Mr. Conforti turned to the British Museum, the British Science Museum, the Patent Office, the Board of Trade and finally the Institution of Heating and Ventilating Engineers.

The only encouraging information he received from these investigations was that British thermal unit was used in a legal document as early as 1820, and that it has gradually evolved from the time Lavoisier and Laplace, in their experiments, adopted a heat unit as a quantity of heat applied to a gramme of ice to convert it into water at freezing point. Later the large calorie, or heat required to raise 1 kilogramme of water 1° Centigrade was adopted. In England the unit of heat was applied to 1 lb. of water raised 1° Fahrenheit, as it is today in all English speaking countries.

But who first used the term or how it came into being must be left a matter of conjecture.

Development of Gas-Operated House Cooling and Air-Conditioning Equipment

"DEVELOPMENTS in the application of gas heat energy to summer air conditioning have steadily advanced during the past year from the technical standpoint. Continuous studies have been made by the Association and by various gas companies and manufacturers which have produced important operating data as well as improvements in major equipment and accessories. This is particularly true of the dehydration method and the steam jet vacuum refrigeration method.

"The data collected last year during the tests conducted under the supervision of the Committee on Industrial Gas Research in the five research residences that were wholly conditioned with gas, were tabulated and presented to the gas industry and the heating, ventilating and air conditioning industries. These data indicate that for comparable service rendered the operating cost with gas is on the whole lower than with other sources of energy.

"The committee early set a goal to work toward applying gas to the average eight- or nine-room dwelling. That goal, which now appears to be entirely practicable, was "Con-

dition a whole house throughout the summer at a cost of $100 or less." The field tests indicate that a plant for a whole house will be used anywhere from 400 hours to 600 hours per summer, depending upon the latitude.

"A summary of the hourly operating data and cost of conditioning dwellings with the Silica Gel adsorption system as shown by the Research Committee's tests is given below.

AMERICAN GAS ASSOCIATION—COMMITTEE ON INDUSTRIAL GAS RESEARCH

Gas-Operated Silica Gel Whole House Summer Air Conditioning
Summary of Data Collected in Occupied Residences

	Chicago No. 2 House 1932	*Chicago No. 1 House 1931*	*Chicago No. 1 House 1932*	*Westchester Co. N. Y. House 1931*	*Westchester Co. N. Y. House 1932*	*Dallas House 1932*	*Baltimore House 1932*
Conditioned Cubage	24000	22400	22400	22500	22500	19700	19300
General Operating Data							
Total No. of Test Hrs.	61	338	111	328	46	300	48
Total Gas Used, Cu.Ft.	4930 CF	38850 CF	9750 CF	49200 CF	6665 CF	36000 CF	5260 CF
B.t.u.	(800)	(540)	(800)	(535)	(535)	(1000)	(500)
Total Power Used, Kw.Hr.	115	809	205.2	492	79	1320	61
Total Water Used, Cu.Ft.	4130	17800	6216	11910	1785	—	1560
Total Operating Cost During Tests							
Gas Rate/M Cu.Ft.	$0.64	$ 0.78	$ 0.64	$ 0.60	$ 0.60	$ 0.65	$0.62
Gas Cost	2.87	30.30	6.24	29.50	4.00	23.40	3.26
Power Rate/Kw.Hr.	0.037	0.037	0.037	0.05	0.05	.022	0.0312
Power Cost	4.27	29.90	7.60	24.60	3.95	29.04	1.90
Water Rate/M Cu.Ft.	0.51	0.60	0.51	4.00	4.00	—	1.00
Water Cost	2.14	11.66	3.17	47.70	7.13	—	1.56
Total	$9.28	$71.86	$17.01	$106.45	$15.08	$52.44	$6.72
Hourly Operating Quantities							
Gas, Cu.Ft./Hr.	73.5	118.6	88	150	145	120	110
Power, Kw.	1.89	2.39	1.85	1.5	1.72	4.4	1.27
Water, Cu.Ft./Hr.	68.7	52.7	56	36.4	39.6	0.0	32.5
Average Operating Cost/Hour							
Gas	$0.047	$0.0925	$0.0561	$0.0900	$0.087	$0.078	$0.0682
Power	0.070	0.0885	0.0684	0.0750	0.086	0.094	0.0325
Water	0.035	0.0316	0.0285	0.1456	0.155	—	0.0396
Total	$0.152	$0.2126	$0.1530	$0.3106	$0.328	$0.172	$0.1403

"Studies, tests and limited actual manufacturing experience in manufacturing seem to indicate that, for the same capacities, gas equipment can be manufactured to sell at prices easily competitive with equipment using other sources of energy.

"During the year additional installations have been made in Philadelphia, Chicago, Baltimore, Brooklyn and Kansas City. Other installations will be completed before the summer is over. The first gas installation in a restaurant was made in Brooklyn, and the first installation in a public library was made in Baltimore. One of the large display buildings at A Century of Progress Exposition is cooled with gas.

"The Research Committee is cooperating in an important investigation at the University of Illinois Medical School to measure the extent of relief that sufferers from hay fever and asthma can expect when living in an atmosphere of air conditioned by the gas-operated adsorption method. From preliminary studies it is expected that air treated in this manner will show many advantages for this service.

"The gas-operated dehydration machines developed during this research have been found suitable for treating air in connection with manufacturing processes. This is particularly true in the leather industry, where a number of installations have been recently made and where satisfactory results are being secured."—*From Annual Report of Committee on Industrial Gas Research, F. J. Rutledge, Chairman.*

Large Volume Water Heating

"IN order to secure more definite information and data on which to plan a general sales program it was decided to prepare a questionnaire addressed to those gas company members who had devoted some effort in the sale of large volume water heating to ascertain what their general experience had been. The following form was devised by your committee and mailed from

	Apt. No. 1	*Apt. No. 2*
1. Number of suites	33	43
2. Number of rooms (Total)	76	—
3. Hot water outlets	100	175
4. Number of occupants	54	—
5. Hot water storage capacity	400 gals.	800 gals.
6. Anthracite coal used (yr. 1929)	30 tons	52 tons
7. Anthracite coal cost per ton (yr. 1929)	$13.50	$13.65
8. Anthracite coal cost per week	7.80	13.65
9. Estimated gas per week	20 M. Cu.Ft.	33 M. Cu. Ft.
10. Period of operation with gas	6/27-11/6 (132 days)	6/5-11/12 (160 days)
11. Gas consumed per week	20,400 Cu.Ft.	29,200 Cu. Ft.
12. Total gas consumption	385 M. Cu.Ft.	668 M. Cu. Ft.
13. Total gas cost	$155.00	$282.55
14. Gas cost per week	8.22	12.37
15. Cu.ft. water heated	18,184	37,189
16. Gals. water heated	136,380	278,887
17. Avg. hot water temp.	155.5° F.	142° F.
18. Avg. cold water temp.	65° F.	64.3° F.
19. Avg. degree rise	90.5° F.	77.7° F.
20. Avg. daily hot water 80° rise, gals.	1170	1690
21. Daily hot water per suite 80° rise, gals.	35.4	39.4
22. Daily hot water per outlet 80° rise, gals.	11.7	9.68
23. Daily hot water per capita 80° rise, gals.	21.6	—
24. Efficiency, average overall	49.4%	50%

A.G.A. Headquarters on June 3, 1933.

"Information obtained from this questionnaire will be correlated and sent out from A.G.A Headquarters during the coming year. The composite report will contain valuable information and data and should be of interest to the industry in general.

"A number of interesting new installations of Large Volume Water Heating equipment have been reported to the committee during the present year. *One in particular being a commercial building with 12 floors and 216 rooms. The average number of people in the building is 432. Hot water system throughout the building consists of a two pipe gravity circulating arrangement. The heater now in operation is a new type; water being circulated by pump, with motor-driven fan in flue giving forced draft. The test data are given herewith.

"During the year 1930, a very thorough test was conducted by an †Eastern Gas Company, covering two apartment house buildings, burning anthracite coal. The grates were removed from the coal burning boilers and gas conversion burners were installed. Regular type aquastats were installed for controlling the temperature of the hot water in the storage tanks. Recording thermometers with 24 hour charts were installed in the hot water tanks and a recording thermometer with seven day chart was installed in the cold water supply line in one of the two buildings. Gas meters with recording demand attachment and water meters with recording demand attachment were placed on each installation. Dampers were removed and draft diverters were installed in the flue pipes.

HEATING VALUE OF GAS USED 1,130 B.t.u. NATURAL GAS

Date		Water Heated in Gallons	Gas Cons. in Cu.Ft.	Water Inlet Temperature	Storage Tank Temperature	Cu.Ft. Gas/ Gal. Water
April	28, 1933	3,230	2,500	65° F	128° F	.773
	29	2,180	2,100	65° F	128° F	.963
	30	770	1,700	65° F	128° F	2.2
May	1	2,720	3,000	65° F	128° F	1.1
	2	2,780	2,800	65° F	128° F	1.007
	3	2,840	2,900	65° F	128° F	1.02
	4	2,750	2,900	65° F	128° F	1.054
	5	2,560	2,800	65° F	128° F	1.092
	6	1,850	2,400	65° F	128° F	1.296
	7	570	1,500	65° F	128° F	2.675
	8	2,740	2,800	65° F	128° F	1.021
	9	2,770	2,900	65° F	128° F	1.047
	10	2,550	2,900	65° F	128° F	1.137
	11	2,550	2,700	65° F	128° F	1.058
	12	2,900	3,000	65° F	128° F	1.033
	13	1,910	2,400	65° F	128° F	1.257
	14	730	1,700	65° F	128° F	2.325
	15	2,440	3,400	68° F	144° F	1.393
	16	2,670	3,700	68° F	144° F	1.387
	17	2,400	3,700	68° F	144° F	1.54
	18	2,280	3,500	68° F	144° F	1.533
	19	2,570	3,000	68° F	144° F	1.168
	20	1,850	2,400	68° F	144° F	1.297
	21	630	1,300	68° F	144° F	2.06
	22	2,450	2,900	68° F	155° F	1.183
	23	2,330	2,800	68° F	155° F	1.2
	24	2,720	3,000	68° F	155° F	1.103
	25	2,750	3,100	68° F	155° F	1.127
	26	2,490	2,800	68° F	155° F	1.125
	27	2,400	2,800	68° F	155° F	1.166
	28	960	1,500	68° F	155° F	1.56
	29	1,930	2,300	68° F	155° F	1.192
	30	540	1,200	68° F	155° F	2.22
	31	2,660	2,800	68° F	155° F	1.052
June	1	2,620	2,900	68° F	155° F	1.107
	2	2,210	2,500	68° F	155° F	1.13
	3	1,650	1,800	68° F	155° F	1.09
	4	590	1,100	68° F	155° F	1.86
	5	2,180	2,400	68° F	158° F	1.10
	6	2,170	2,400	68° F	158° F	1.10
	7	1,880	2,100	68° F	158° F	1.10
	8	1,640	2,000	68° F	158° F	1.21
	9	1,700	2,000	68° F	158° F	1.17
	10	1,230	1,500	68° F	158° F	1.21
	11	390	700	68° F	158° F	1.79
	12	2,250	2,400	68° F	158° F	1.06
	13	2,100	3,000	68° F	158° F	1.04
	14	2,090	2,300	68° F	158° F	1.10
	15	1,980	2,100	68° F	158° F	1.00
	16	2,240	2,400	68° F	158° F	1.06
	17	1,560	1,800	68° F	158° F	1.15
	18	500	900	68° F	158° F	1.08
	19	2,110	2,300	68° F	158° F	1.00
	20	1,910	2,100	68° F	158° F	1.09
	21	2,030	2,200	68° F	158° F	1.08
	22	1,910	2,100	68° F	158° F	1.09
	23	2,110	2,200	68° F	158° F	1.04
	24	1,410	1,700	68° F	158° F	1.20
	25	440	800	68° F	158° F	1.08
	26	1,890	2,000	68° F	158° F	1.15
	27	1,900	2,100	68° F	158° F	1.01
	28	2,100	2,200	68° F	158° F	1.00
Total		123,260	145,200			1.17

Result of test run for electricity consumption on motor operating water heater (6/24 to 6/28) 1933.

Water heated..... 7,283 gal.
Gas ..... 8,300 cu.ft.
Electricity ..... 8 kw.hr.
1 + kw.hr. for every 1,000 gals. of water heated.

Data Obtained

"In addition to the records obtained on the various recording instruments, daily readings were taken of the index dials of the water and gas volume meters. The daily chart records of hot water temperatures were analyzed to determine the average hourly and daily water temperatures.

"The operation of these two water heating systems was entirely satisfactory during the period of operation with gas. Except for very unusual demands for hot water on one or two occasions on Sunday noons, between 10 and 2 o'clock, the temperature of the hot water was maintained at the desired point. These conditions could have been corrected by increasing the gas demand on the burner, as it was not operating at its maximum capacity.

"Even though the boilers in which these burners were installed consisted of but a single dome shaped section without any intermediate baffling section, nevertheless, the flue losses did not exceed 20%.

"It will be noted from item (13) and item (16) that the actual gas consumption compared very favorably with our estimates. The actual at Apt. No. 1 being 2% over the estimate and the actual at Apt. No. 2, being 11½% under the estimate. The costs of operation, likewise, compared very favorably with gas as against anthracite fuel—the actual cost of gas at Apt. No. 1 being but 5½% greater than the cost of anthracite and the actual cost of gas

* Equitable Gas Co., Pittsburgh, Pa.

† Rochester Gas and Electric Corp., Rochester, N. Y.

at Apt. No. 2 being 9½% less than the cost of anthracite.

Character of Gas Load

"The gas load obtained from this type of installation has certain very desirable characteristics. The hourly demand can be held to a comparatively low figure, providing there is adequate hot water storage capacity. In practically all apartment buildings, this type of additional load can be connected without involving replacement of the gas service.

"On these two particular installations the gas burners operated with a load factor of 43.4% and 56.2% respectively, the higher load factor being obtained on the installation with the greater storage capacity per apartment suite. This means that these burners were in operation on an average of 10.4 and 13.3 hours, respectively, out of every 24 hours. Furthermore, it has been found that approximately one-third of the total gas consumption was used between the hours of 7 p.m. and 7 a.m.

General

"There is the question, however, as to whether the owners of apartment buildings will consider making an investment in several hundred dollars' worth of equipment to use gas at an equal or increased cost over anthracite. (Equal or within 10% of cost of $13.50 anthracite at present gas rates.) Very little, if any, labor saving will be granted by the building owners, for 24-hour janitor service is provided in practically all apartment buildings. The use of gas, however, does provide a clean, convenient and automatic means of supplying hot water, features which undoubtedly have some value and tend to eliminate hot water complaints.

"The use of gas for summer water heating would be very readily accepted by the owners of those apartment buildings where the larger sizes of anthracite are use, if the gas rates were such that there would be sufficient savings to show a reasonable return on the investment. Another arrangement which would be acceptable and which would eliminate any change in the rate schedule would be for the company to furnish and install the necessary gas equipment free of charge, or perhaps on a nominal rental basis with cancellation of the minimum monthly charges."—*From Committee Report, S. B. Finch, Chairman.*

AMERICAN GAS ASSOCIATION

INDUSTRIAL GAS SECTION
420 Lexington Ave.
New York, N. Y.

QUESTIONNAIRE ON LARGE VOLUME WATER HEATING

I. Total potential market in cu.ft. of.....B.t.u. gas annually:
- a. Number of apartment house buildings, six families or over.....
  - 1. Total number of apartment suites.....
  - 2. Total potential apartment house load.....
  - 3. Percentage of apartments over 25 families.....
  - 4. Approximate percentage of load obtained for summer use only.....
- b. Industrial & Commercial total potential gas load.....

II. Sales Organization
- a. Type of organization, whether independent or part of some other department.....
- b. Number of salesmen.....
  - 1. Method of compensation.....
- c. Describe advertising efforts on large volume water heating.....
- e. What terms are given in purchase of equipment? Rental, outright purchase, etc.....
- f. Types and make of equipment sold: Conversion, Cast Iron, Multicoil, etc.....
- g. Are your sales efforts seasonal or continuous throughout the year?.....
- h. What are principal competing fuels?.....
  - 1. What are price differentials?
    1000 cu.ft. equivalent to.....gal. of No.....oil at.....¢ per gal.*
    1000 cu.ft. equivalent to.....tons of.....coal at $..... per ton.*
    *Actual operating figures.

III. Results and Analysis:
- a. What is the form of rate?.....
- b. Is rate special for large volume summer water heating only?.....
- c. Operation of average installation:
  Approximate 100,000 B.t.u. consumption per month.....
  Approximate cost per month.....
  Cost per 100,000 B.t.u.....
- d. What per cent of total sales is sold through this form of rate?.....
- e. Relationship between selling large volume water heating and house heating in respect to rates, load factor of distribution system.....
- f. How long have you been endeavoring to secure this business?.....
- g. What effect has business secured to date had on load curve?.....
- i. What is your opinion of results secured?.....
  1. Approximate rate required to obtain major portion of load.....¢ per 1,000 cu.ft.
  2. What is the Public Service Commission attitude?.....
  3. Are you inclined to expand sales efforts?.....
- j. Grade sales resistances: least ( ) ( ) ( ) ( ) ( ) Greatest
  A. Apartment Houses
  B. Hotels
  C. Restaurants
  D. Industrial Plants
  E. .....

Company .....
By .....
City .....State .....

Commercial Section

N. T. Sellman
Chairman-Elect, Commercial Section

Commercial Activities in Great Britain

T. P. RIDLEY, Commercial Manager and Secretary, Newcastle-Upon-Tyne & Gateshead Gas Company, in his paper, "The Commercial Development of the Gas Industry In Great Britain," gave an interesting account of the procedure his company follows in load building. From this paper the following features are presented:

Industrial Sales

"The question of the development of the sale of gas for industrial purposes is at present very seriously engaging the attention of the British Gas Industry. There are a few cities where it has been largely developed; in Sheffield about 50% of all the gas sold is for industrial purposes and the percentage is on the increase, and in Birmingham the percentage is about 30%. With appropriate scales of charges there is a great future for gas in Great Britain for industrial purposes. The industry is being organized in districts with a large undertaking in each acting as a centre to which smaller undertakings may for a small annual subscription have the benefits of advice and assistance from the larger undertaking and take their customers to the Demonstration Rooms of the latter. The central undertaking periodically circulates to its members data obtained on jobs with which it has been dealing and also supplies same to a Central Committee representative of the centres. This Central Committee will disseminate to all the districts such information as it considers will be useful.

Electrical Competition

"Competition with electricity is very keen for domestic lighting and appliances. In many districts very little headway is being made with electrical cooking; it is found to be too slow and too expensive. With regard to heating, a gas fire is generally preferred because of the greater warmth given. As to lighting, electricity is usually preferred in better class houses and it has made headway in other directions recently, largely due to the demand for "All Mains" radio connections, but with activity and enterprise on the part of the gas undertaking much can be retained and much can be, and is being, recovered. Every employee of the company which the author serves is from time to time reminded to notify any information with regard to competitors' activities and on receipt of such a notice a counter canvassing team is sent out to the district concerned and generally with very satisfactory results.

Domestic Heating

"House heating in Great Britain is done mostly by self-contained heaters in rooms by coal, coke, gas or electricity. The amount of house central heating is comparatively small but oil has been gaining over coke for this purpose during the last few years. A few large buildings have recently had gas applied for central heating and this is likely to increase if low special prices are quoted.

Sales Staffs

"The sales staffs are recruited in many instances from fitters and in some cases from men of the good clerical type who have shown an aptitude for selling, and, in the opinion of the author, these latter with sales and technical training, make the most effective domestic gas salesmen. The industrial salesmen must be trained engineers with wide experience of the work carried out in the factories.

"Much thought and attention has been given recently to the question of the education of Salesmen, a subject which is considered to be of paramount importance. Courses for gas salesmen have been prepared at the instruction of the British Commercial Gas Association and have been linked up with the technical Education Scheme of the Institution of Gas Engineers. These courses have been taken by large numbers of salesmen, generally with the financial assistance of their undertakings.

"The outstanding feature of the recently inaugurated Salesmen's Courses has been the sustained enthusiasm of the students, the steadiness with which they have set themselves to complete their courses, and the increased ability and force of the selling staff. The company out of a selling staff of 90 has members who have taken the courses shown in Table I.

"Included in Table I are men who have obtained the silver and bronze medals and a prize for gas supply, and distinction in economics of gas supply. Lectures are occasionally given on Saturday mornings to the workmen employed on the Universal Maintenance Scheme later referred to.

Publicity

"Practically every undertaking has at least one showroom and the larger ones at the rate of about one for each 1,000 million cu. ft. of gas sold per annum.

"The following are some of the propaganda activities during 12 months of one provincial undertaking selling 5,000 million cu. ft. per annum.

1. Over 170,000 enquiry and business-getting calls were made by the Outdoor Sales representatives.
2. Some 750,000 advertising

presented:
pamphlets, booklets, sales letters, etc., dealing with gas and gas appliances were distributed.

3. The Traveling Gas Showroom was consistently successful in bringing before customers in outlying districts the modern achievements of gas; 18,000 persons inspected it during its tour last year.

4. Over 250 illustrated display advertisements of varied appeals appeared in the local newspapers.

5. Advertising slides were shown at each performance in 50 cinemas in the area.

6. Demonstrations in cookery and home laundry were given almost every week in halls in various parts of the area for Women's Institutes, Women's Guilds and other Associations, as well as for the general public.

7. Lectures and demonstrations were given at Welfare Centres under the auspices of the City Health Department on 'good marketing and the economical use and cooking of foodstuffs.'

8. Courses of lectures and demonstrations in cookery were given to over 600 business girls, thereby better equipping them for married life.

9. A two weeks' exhibition of gas labor-saving appliances, model rooms and demonstrations was staged in one of the large retail stores in the city.

10. Some 3,425 gas consuming appliances were disposed of at the company's annual 'Sale,' which, together with other items, reached the total of over 11,000 articles.

11. Several furnished model houses, fully equipped with gas labor-saving appliances, were opened to the public for inspection.

TABLE 1
Courses Taken by the Sales Staff of the Newcastle and Gateshead Gas Company

Subjects	Certificates Obtained	Further Students Taking Course	Total
1	2	3	4
1. Domestic Gas Salesmanship	12	..	12
Domestic Gas Salesmanship and Gas Sales Technology	29	16	45
2. Domestic Gas Salesmanship and Ordinary Grade Gas Supply and Economics of Gas Supply	3	4	7
3. Domestic Gas Salesmanship, Higher Grade Gas Supply and Economics of Gas Supply.	5	1	6
Total	49	21	70

What Price New Business

"WE have," said Mr. Morse DellPlain, President, Northern Indiana Public Service Co., "a very definite interest in the outcome of the movement and must assume a corresponding responsibility to accelerate the advance of the fundamental N.R.A. idea. The greatest direct contribution which we can hope to make to the success of this great economic experiment is the adoption within our individual companies of a sound aggressive new business policy. We are challenged to put our business on a profitable basis despite rate reductions, despite the handicap of a lessened ability to finance development programs by means of outside capital, and despite the threatened increase in almost every item that enters into the cost of rendering service. Notwithstanding all of this, the fundamentals of our business are the same today as they were yesterday and if our executives will display the necessary energy, aggressiveness and flxibility of mind, we shall still do our part in the face of new conditions, and when I say 'executives' I refer to sales executives as well as others."

He further indicated that our big job at the present time is to put more load on the present system.

Mr. DellPlain mentioned the need for the adoption of a promotional form of rates in order to do any worth while job in load building.

He called attention to the need for impressing the customers with the gas company's idea to have the service as nearly perfect as possible and said that the proper kind of advertising should be indulged in.

"Local advertising," said Mr. DellPlain, "is advertising that brings home to the consumer the fact that the utility truly is a part of his community and usually one of the largest taxpayers in it—is vital to the industry. This advertising should emphasize particularly the service rendered and the desire of the company to truly meet the demands of the community; demands not only for therms of gas, but also for the rounded additional services for which the customer pays in his monthly bill."

MAGIC WASHING USHERED IN

Soap and water, or its elder brother, alkali washing compounds such as are used in the metal industry, hark back into antiquity for their eldest applications. Many a housewife has wished for the lamp of Aladdin to eliminate the reddened fingers and the back-breaking work of the family wash.

But no, this magic washing won't help her, but it will help the metal business. Quite recently there has been perfected a magic washer which uses no soap, no alkali, but a new material, trichlorethylene. In spite of its formidable name, this material is a miraculous cleanser.

Aided by engineers of the American Gas Association, applications of gas boilers to tanks containing the new washing material have speeded up metal washing to an astounding degree. In one plant, described at the International Gas Conference at Chicago, the conventional alkali washing equipment occupied a space of 30 by 12 feet. With the new magic washer, a greater output is handled in an area of 15 square feet.

The cleaning tanks are also ingeniously devised so that the dirty liquid can readily be distilled and thus restored to its usefulness, the dregs being thrown away. The trichlorethylene metal washing process truly deserves the name of magic wash.

He stated that he was opposed to the gas utilities getting out of the appliance sales field, saying "it is a political expedient which is basically unsound."

Concerning the matter of dealer selling, he noted that "the fallacy that the dealer would gain the business surrendered by the gas company has been established time and time again both in those states where it is illegal for the utility to merchandise and in those communities where gas companies have experimentally withdrawn from retailing or eased up in their efforts. After several years of aggressive storage water heater promotion in one of our districts, we, as an experiment, withdrew from the field and turned the business over to the dealers. As the momentum of our effort subsided, the volume of water heater sales dropped until the dealers were actually selling less water heaters when we were out of the business than they were with us in it. They came to us and asked us to go back into the retail field. They realized that without our leadership, our educational and sales promotional effort, they were totally unequal to the job. The dealer cannot and should not be expected to do the job.

Intensify Competition

"The big curse of measuring the success of a merchandising department in terms of its sales of appliances in dollars and cents and with its compensation plans patterned accordingly is that it is too restrictive in its general effects. It intensifies competition where there should be cooperation in the sale of an appliance. It tends to discourage dealer cooperation and nullify most of the potential benefits of favorable trade relations. It is also restrictive to the manufacturing group; these manufacturers have a most important place in this picture and any utility policy that restricts opportunities for all manufacturers of quality equipment in any particular field is restrictive as far as the better interests of the utility are concerned. The utility by limiting its efforts to the products of one or two manufacturers, to all intents and purposes throws an undue proportion of the total available business to those one or two manufacturers at the expense of those other manufacturers who are both willing and able to do a job but only with the utility support now given to their competitors. This broadening of the field will also broaden the scope of the manufacturers' advertising, and through the media of trade magazines published primarily for allied trades, bring the story of gas and the opportunities going with the sale of gas equipment to those trade bodies. A broadening of the field even at the comparatively insignificant sacrifice of merchandise sales volume will bring additional installation and service work to allied trades and thereby strengthen the entire industry."

CORKING UP THE CHIMNEY

Ingenious designers have thought of a device for creating further economies in home heating. It may be likened to a magic genii who corks up the chimney to keep the heat in the house during the hours when the automatic heating equipment is not in use. In the old-fashioned days of coal-burning boilers and furnaces, the chimney draft was always needed, but with modern automatic gas heating, the gas goes on and off as the temperature of the house requires. Thus, during the off periods, heat escapes through the chimney.

This new device, announced at the convention of the American Gas Association, consists of an automatic damper so regulated by the flow of gas that it corks up the chimney and prevents heat from escaping from the house as soon as the gas burners are shut off. It is estimated that as much as ten per cent of the annual heating bill may be saved by this new development.

Putting Over A Real Campaign

MR. C. A. Nash's vice-president, The United Light & Power Engineering & Construction Company, Davenport, Iowa, very interesting paper "Capturing Today's Home Heating Market," narrated the need for his company's taking on some additional load in order to increase the natural gas send-out. In this connection, they found that due to business conditions it was virtually impossible to secure much increase from industrial usage and therefore the house heating field which at that time bordered upon 14% saturation, was the only remaining outlet.

The house heating campaign which they subsequently pursued for increasing the load was planned on the basis of selling 3,000 jobs, averaging about 205,000 cubic feet of gas per heating season so that the desired 600,000,000 feet increase per annum could be obtained. This campaign made use of considerable advertising media, called for the training of a corps of intelligent salesmen, included close cooperation with the dealers and from the economic standpoint, found out just about how much the average customer could pay down on installation and how many months he would want to pay out the balance.

Attractive Terms

"As a matter of fact in this latter regard," said Mr. Nash, "terms were fitted to the customer's liking; financing periods as long as five years were offered."

"The heating activity," said Mr. Nash, "which started in October and continued until December 17th, resulted in the installation of:

964	Circulators	% of Total	32
1846	Conversion Burners	" " "	62
214	Gas Furnaces	" " "	6
3024	Total	" " "	100

43,000 meters
6.5% saturation added

"Of these sales, approximately 800, which represents about 35% of the total number, were made by cooperating dealers. Most of these have turned out satisfactorily, only a small number having had to be removed, approximately 3%, which was unusual, considering previous experience among this class of installations. The cooperating dealers in general were glad to learn through their contact with the Master Stroke Plan points regarding the sizing of heating equipment and the installing

of burners which experience had taught others. Since the close of the activity there has been a marked tendency to continue maintaining this higher standard of installation, realizing that the fewer the removals the better the financial returns and the consqeuent future market..

"Among company sold jobs, there have been some removals and some cases of temporary laxity in the matter of payments. Causes for this necessary suspension of billings in the 21 cases in one company might be cited as follows:

8 due to removal of tenant who had purchased and where there was no chance for further payments until house again tenanted.

5 due to loss of house to Building and Loan Company, who would make no payments until house was occupied.

6 due to renters who would not make summer payments until it was known for sure that they would occupy house during next heating season.

1 due to delay in settling estate.

1 due to possibility of divorce proceedings.

A Fine Showing

"At least 75% of these accounts are now back in good standing on each monthly billing. With one or possibly two exceptions the rest will be satisfactorily settled the beginning of this heating season. One or two may need be removed.

"Among a group of 13 installations which have been taken out, the following reasons may prove interesting:

3 due to change from conversion to gas designed equipment.

3 due to homes lost to creditors not interested in gas.

2 due to moving out of town or into another gas heated home.

2 due to loss of job—no income.

1 due to illness—decreased income.

1 due to death.

1 due to dissatisfaction with gas bills."

"At the end of the heating season," he observed, "some figures were compiled from the records of three of the participating companies which evidences the success with which the plan has worked out. These figures do not cover all of the installations made, but are spread over enough territory to permit an average which will prove close to being correct.

Number paying cash in 30 days 4.5 per cent.

Number paying in full before June 1, 1933 2.2 per cent.

Number who have kept up payments 77.5 per cent.

Number who have missed two or more payments 12.0 per cent.

Number in arrears 60 days 5.7 per cent.

Average amount paid on each burner $22.00.

Number installations removed 4.6 per cent.

"In three-fourths of the territory surveyed, the returns were but 3.2 per cent. In this area, sales were not made directly to tenants, transactions being cleared through the landlord.

"The foregoing results serve to emphasize the point that above all else, the most important function in the success of any selling venture is supervision. It was supervision that kept things moving, that kept the men following through on all the ramifications of the Master Stroke Plan.

"The quota set for installations under this plan was surpassed and the Company was enabled to enjoy *last season*, the additional revenue accruing from the sale of approximately 600,000,000 cubic feet of gas. Today almost all of that entire potential load is still connected to company lines ready to begin another heating season of service for these customers, who are the better risks because of collected payments, and the better boosters because of their past experience."

Modernizing the Kitchen

UNDER the title of "Kitchen Modernization," the following speakers contributed to a symposium: R. A. Maloney, Hugh Cuthrell, Ruth Kleinmaier, Bernard T. Franck and F. M. Rosenkrans.

Mr. Maloney's contribution went on to outline the work the Philadelphia Gas Works Company is doing to popularize and modernize the kitchen. He told how his company had installed an exhibit showing several kitchen layouts, after various experts had been consulted upon the subject.

Newspaper advertisements, radio announcements, bill enclosures, store and window displays and other means are being used to have the customers and other prospects stop in and see the exhibit.

"We believe," said Mr. Maloney, "that the decided lessening in electric range competition in Philadelphia and our own greatly increased sales of gas ranges and gas refrigerators can be traced to a large extent to our activity in promoting the modern all-gas kitchen."

Viewpoints of Cuthrell

"What we have to do," said Mr. Cuthrell, "is develop kitchen planning service.

"We cannot tarry long on this problem. We must begin preparing curselves to go forth and offer kitchen planning service to the public. We must offer it through our Home Service Departments which have the opportunity of gaining the attention and confidence of the customers. Home Service workers should sow the missionary seed of this kitchen planning idea, and the New Business Department should then follow up.

"We must repackage the advantages of our fuel and the benefits of our appliances in a kitchen planning service.

"We are merchandising the Kitchen Compact," said Mr. Cuthrell, "a modern, efficient and attractive kitchen arrangement which makes use of the advantages of modern gas appliances. Most of you undoubtedly know something of what we have done in this field. I will cite one example to show what can be done despite adverse circumstances.

"A Brooklyn resident came into one of our offices to find out about a new range. The salesman learned that the customer was interested in refrigeration. Then the customer explained that his kitchen was in poor shape and, as he entertained considerably, he was somewhat ashamed of it. Realizing the opportunity the salesman made an appointment with the customer to have one of our representatives visit his kitchen and help him improve it.

"After inspecting the kitchen our sales representative brought the customer to see two models of our Kitchen Compact. These were explained by one of our Home Service workers. After some further discussion the customer purchased a Compact and we promised to plan his kitchen in a modern manner.

"Our kitchen planning group provided the customer with a floor plan and elevations in color. It also showed him samples of the various materials to be used and estimates of their cost. These materials included curtains, linoleum, dado covering, paint for walls and ceiling, striping, electrical fixtures and bakelite for folding tables.

"These were all submitted after a careful study had been made of the kitchen. The planning in this case presented a difficult problem because the kitchen was located in a room not originally designed for a kitchen. However, we planned the proposed kitchen in such a manner that all obstacles were overcome to the satisfaction of the customer. This satisfaction increased considerably when we had finished the remodeling and the customer had an attractive, modern kitchen."

The matter of finding out how much the customer can pay for his Compact and also for the materials and work required for a new kitchen must first be obtained and then a plan drawn up with this price factor in mind.

"In drawing up this plan we must learn the problems caused by the size and shape of the kitchen. We have to study the floor, the walls, doors, windows and ventilation so that after our plan is drawn we have taken care of all these problems. We then can offer the customer a kitchen idea that has overcome the obstacles set up through the size, shape and condition of her kitchen.

"Now when we offer this proposed kitchen to the customer, many problems will arise. These relate to design, materials and color. Then we must first show the customer the reason for our design, how we have taken care of the difficulties presented by the kitchen. In the field of materials and especially colors we will find most people with somewhat set notions. It is then we have to point out to the customer our advisory capacity, explaining patiently the reasons why we selected the materials and colors we did. In colors we will face the desire of people for the old dull color schemes except when they have been influenced by the kitchens at this Fair.

"Should the customer require different sized or styled appliances than the kitchen plan calls for, we would be faced with the problem of adapting the rest of the kitchen so that all will present a unified whole—a simplified, attractive, modern kitchen.

"After all these problems have been solved we have two comparatively minor ones before proceeding to the large general one of installation. The two are dismantling of the old kitchen and providing temporary cooking facilities. The dismantling can be done in whatever manner the customer desires, but we must be ready to have the installation work start as soon as the dismantling is completed. In the meantime we must be ready to have a gas hookup to provide cooking facilities while the kitchen is being fixed."

Rosenkrans' Observations

Mr. Rosenkrans' observations on this subject are as follows:

"The key to modernizing the kitchen is the aggressive sales attack by the gas utility and its associated dealers, to replace the antiquated cooking equipment with a modern gas range, installing a gas refrigerator, and, around this as a center, assist the householder to perfect the kitchen arrangement to give the greatest convenience and save steps for the kitchen worker.

"In the principal offices, model kitchens have been built. These kitchens have been designed with the assistance of architects and home economics experts so that housewives and gas company patrons can be shown firsthand those features that enhance and make the modern kitchen the pride of the housewife. Tying in with the national program which has been forwarded on monel metal work tables and sinks, several of these kitchens have been equipped with the monel metal fixtures. Gas range manufacturers have built ranges to match so the whole scheme of the kitchen decoration and fitting is harmonized.

"It has been the practice for a number of years for newspapers throughout the territory served by The Gas Service Company to annually conduct newspaper cooking schools. These schools have proven most popular in these communities and the newspapers have given liberally of their space in connection with the features of the school, which have resulted in a real educational program for the housewife. The local gas company always participates very largely in such schools through furnishing modern gas cooking equipment, water heaters, and, wherever possible, a gas refrigerator.

"In The Gas Service Company group we have endeavored to consistently carry forward a program of replacement of old equipment, as well as to secure modern gas equipment specifications for every new home built. During the past seven and a half years, through our own channels, we have been able to sell approximately thirty-two per cent of our customers new gas range equipment. The company having the highest record in The Gas Service Company group has sold approximately fifty per cent of their approximately fourteen thousand domestic customers' new cooking equipment during the past seven and a half years."

Regarding electric competition in apartment houses he noted:

"Our companies tackled the situation through selling gas through a master meter, so that free gas might be included to the renter of the apartment. The gas load in many of the newer apartment buildings has been secured for the gas company by the master meter, and the electric competition has been met. In our major situations no apartment houses during the last two years have been completely equipped with electric range equipment. We found it was necessary to use special men who have the personality and training to contact the architect, builder and contractor, to present to them the equipment which is especially designed for apartment house use.

"Further electric competition has been eliminated in many situations through the presentation of the automatic gas range which has the automatic time control in addition to the temperature control, automatic lighting, etc."

Miss Kleinmaier's Ideas

"The motive," said Miss Kleinmaier, "for establishing a bureau is threefold.

1. It is a service in which the customer is interested because it gives her expert advice regarding a subject that is part of her everyday life. It is going to make her work not only more efficient but more interesting.

2. It creates in the customer's mind a desire to have these modern appliances in operation in her own home. Thus this aids the company or the dealer greatly in selling the gas service or appliances to the customer for the appliances with which she operates her Complete Gas Home.

3. The fact that this service is without charge creates a friendly feeling between the customer and the Gas Company.

"The next step to consider is a method of operation for compiling these plans. Our procedure is as follows:

1. A visit to the customer's home is made to obtain all necessary information. The word 'necessary' should be underscored as it is as impossible to draw a plan without full information as it is to sell an appliance without sufficient knowledge of it. This data is obtained by Dealers, Salesmen, Greater Service or Home Service Representatives. It is then checked by the Home Service Representative in whose district it originated and is sent to the general office for completion. A form is provided on which to write the above information and each person has a set of instructions to check in order to have complete detail.

2. Upon receipt of the plan in the General Office the name, address, date to be returned and the person to whom it is to be sent upon completion, is noted and it is given to the Drafting Department where the entire book is prepared under the supervision of the Home Service Director. This plan includes a page containing the customer's name, and address, one giving a story of the book and the value of modern appliances, a floor plan of the kitchen, bathroom or basement as the case may be, including placement of equipment and lighting outlets, four elevations in color of the four sides of the room and pictures of the suggested equipment and appliances that are to be placed in the customer's home.

3. The plan upon completion is checked and returned to the district in which it originated. This is then returned and is presented to the customer as her own personal book.

4. A careful record is kept of each plan as to time received, new appliances suggested in the plan and the appliances the customer finally purchased. In this way we have a record of the value of the plans and how they are accepted by the customer. This plan is also valuable in planning basements and assisting in the sale of gas house heating."

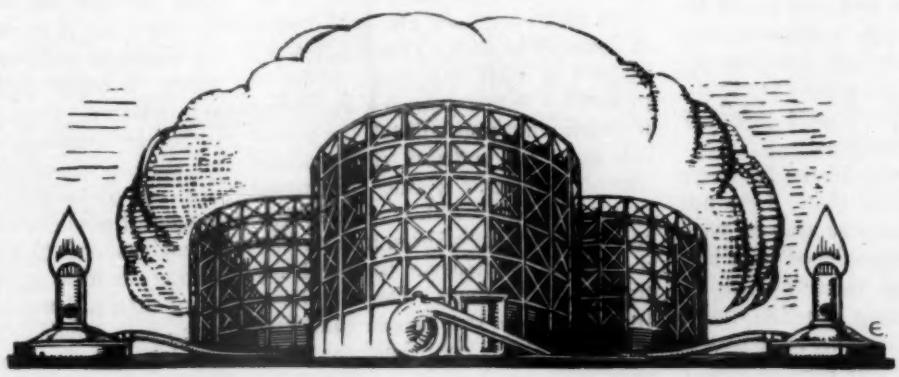
Thoughts of Bernard T. Franck

"The ever-perplexing question as to how much money a company should spend on this work," said Mr. Bernard T. Franck, "is one which I hesitate to touch upon. However, broadly speaking, it does not seem wise to me to attempt to protect an investment which, in most cases, runs into millions of dollars, with an insignificant outlay resulting in a mere gesture, while our competitors are spending seemingly large sums to broadcast the gospel of a better and up-to-date kitchen with a fuel other than gas.

"Briefly referring to my own organization, we believe that possibly 15% to 20% of our customers may be vulnerable to the propaganda and sales arguments of those who are endeavoring to displace gas in the kitchen. These are our better class of customers, fairly large domestic users of gas, who take pride in their homes, and have the means and desire to make them as convenient and attractive as possible. We also believe that the cooking load is the key to the situation. A vigorous program on kitchen modernization with all-gas equipment, a program which features the up-to-date gas range, will be directed at this group. Because of the all-round superiority of gas equipment we are confident of success.

"We look upon our efforts in this direction mainly as an educational program. Our success will not be gauged by the number of kitchens we modernize or the number of appliances we sell. The test, over a period of years, will be—how many kitchens we win from, or lose to our competitors.

"Nodding your head in assent here, and doing nothing when you get home will not help our mutual cause a bit. But, if every gas company in the country were to undertake an aggressive program promoting the modern, all-gas kitchen, in my opinion, we would succeed in weaving a web of public acceptance for the up-to-date, all-gas kitchen which would be impervious to the attacks of competitive enterprises."



Publicity and Advertising Section

Publicity and Industry

THIS paper by A. P. Ryan, Publicity Manager, The Gas Light & Coke Company of London, contained much of interest to its American listeners and showed that many of their advertising problems across the water are quite similar to ours.

In part he said:

"Publicity is part of the machinery of Distribution and Distribution is still the Cinderella of industry. I do not say that Management and Production are the two Ugly Sisters; rather they are the elder but no less eligible members of the family. Mass Production has a long tradition behind it and it has been brought, if not to perfection, at least to a marvellously high standard of excellence. Mass Distribution is still young. Marketing and salesmanship on the scale that the modern world demands are not yet fully understood. Those of us who are engaged in distribution—and we include all sales and publicity men—are, in a sense, pioneers of industry. We are making our own traditions and working without old established rules. That is why, to my mind, distribution is the most fascinating job in the modern world.

"The Sales side of big businesses although youthful, has more experience behind it than has publicity, which is nevertheless, its twin—almost its Siamese twin, the two are often so hard to separate. A definition of Sales would be outside my present scope, but here is one of publicity. *It means telling people the truth about your business in so far as it concerns them and making it interesting.* I ask you to examine that sentence very carefully, because every word in it is of practical significance in helping to make publicity our efficient servant.

"First, telling the truth; let there be no mistake about that. I do not deny that temporary success in sales may sometimes be achieved by telling lies or distorting facts (which is much the same thing as telling lies). But no great industry or commercial enterprise can achieve success except on the basis of being absolutely truthful about what it has to offer. That is putting the matter on its lowest plane. As a publicity man I may be allowed to add that you will not get any one who is keen and competent at his work to play tricks with the truth. I mention this because it affects the whole area of publicity. Happily, it has no practical bearing whatever on the problems of the Gas Industry. The Gas Industry sticks to nothing but the truth. It has a magnificent true story to tell and it has leaders who would forbid it to tell anything else.

Henry Obermeyer
Chairman-Elect, P. & A. Section

"They Don't Want To Read It"

"Now to come to the second point in my definition—telling people the truth about your job *in so far as it concerns them*—please mark, especially, that 'in so far as it concerns them.' It is the first instinct of any one who loves his own trade to assume that every one else will love it in detail as he does. This is a healthy instinct in itself, but it is suicidal to publicity. When you are beginning to think what you will tell the public you must tell yourself at the outset that the public is a much distracted man and woman with very little time to spend on your affairs, and no predisposition whatsoever to spend any time at all on them. Do not, therefore, anticipate that people will know anything about your business however commonplace it may seem to you. It is no concern of theirs and, so, the chances are that they have never bothered about it. *'They don't want to read it'* is a warning kept permanently on the desks of all wise publicity men. Let us check this by considering what the man in the street knows, or, rather, does not know about the gas industry. He does not know that he ought to say 'gasholder' instead of gasometer.' He would not understand you if you talked about 'radiants,' although he is familiar with the objects themselves and thinks they are made of asbestos. Phrases like 'on the district,' 'calorific value," 'products of combustion" and 'retort houses' are Greek to him. If you asked him to distinguish between the gas he gets through his meter and 'coal gas,' 'town's gas' and 'water gas' he would be stumped for an answer. If he was told that his gas undertaking possessed a 'Booster House' he would, I am sorry to say think that you were referring to its publicity department, for 'boost' has only one meaning to the layman, and one that has nothing to do with engineers.

"Does the man in the street even know that gas and electricity are in Great Britain made from coal or, if he does, what about his wife? If every gentleman in this room took a census of the women in his area of supply, what percentage of them would be able to say that gas and electricity are made from coal? Many of you will, no doubt, protest that really I am going too far and that, of course, all the world and his wife at least know this childishly simple truth. Well, I have no figures to back me up—and neither have you. Let us leave it there, while agreeing on the main point that no limits can safely be set to public ignorance of any industry. People do not naturally bother, I repeat, about what does not directly concern them. The practical use of keeping this fact before one in all publicity is twofold: First, it enables one to guard against allowing an idea, a phrase or even a word that will not be understood to creep into publicity material. Nothing kills interest so quickly as the introduction of the unintelligible and, remember, people do not tell you they

have not understood your advertisement—they just let it drop out of their minds. Secondly, it forces one to select from a mass of technicalities, those aspects of one's industry that can be shown to concern the public.

Advertising to One's Self

"Here is a wide field and to enter it brings me to the last part of my definition of publicity—making whatever one says interesting. How obvious that sounds and how often it is not acted upon.

"Three parties are concerned with every advertisement:—those who pay for its production, those who produce it and those whose spending power it is intended to influence. This state of affairs creates certain pitfalls. Two of the three parties—manufacturers and advertising agent—consult and confer, while the third party—the public—is never present until it is too late for him to do anything except register his opinion on the finished advertisement. In theory it is easy to keep in mind that the absent partner is the one whose decision makes for success or failure. In practice, manufacturer and agent, being human, are apt to please themselves. The one, proud of his factory and his products, wants to have their technical virtues extolled in print and picture. Once he lets himself go along this attractive line, he is liable soon to be out of the public's depth. His agents, if they are weak or cynical, may let him rip and the result will be an advertisement to please the Board Room and bore the public. Agents, again, without being either weak or cynical may allow their own professional enthusiasm to run away with them. It is hard for a man whose trade is words or drawings to scrap what seems good in his eyes and likely to provoke admiration among other writers or artists, because it won't help to sell something. As many advertisements fail through too much cleverness as through too many technicalities. How tempting it is to advertise one's self: What lots of advertisements appear for all sorts of commodities that have so evidently given pleasure to those who paid for them or those who made them and that will so evidently die of public neglect.

"If your publicity appropriation is to be well spent, you have to fix clearly in your eye the people you are seeking to interest and, then, to tell your story in a way that will persuade them they are missing something valuable if they do not listen to you. Every advertisement ought to be scrutinized from this point of view and none should be passed if it falls short of this standard. *A man who is quite ignorant of the industry but knows how to write is, as a rule, better than any one in the industry at preparing an advertisement. It is almost impossible for those who are steeped in the atmosphere of an industry to speak about it interestingly to the public. Writing is a highly technical business. You would not employ an amateur as an Engineer. Your danger of breakdown will be no less great if you have your advertisements written by unprofessional hands.*

"Let me offer a few tests of whether an advertisement will influence the mass of people for whom it is meant and who DON'T WANT TO READ IT:

1. Do you, although you know nothing and care nothing about the

New
Minister
for Heat
Mr. THERM
appointed
Last night's Official Gas-ette contained the announcement that Mr Therm had been appointed Minister for Heat.
Behind this bald official statement burns a romance that touches the hearths and homes of 5,000,000 Londoners, whose lives have been brightened, health improved, and leisure increased by the unfailing energy of Mr. Therm. The appointment is very popular in Economical circles No Minister has come to his task better equipped than Mr. Therm, who will cook 8 Sunday dinners for 4 people, or heat enough water for 8 hot baths, or keep a gas iron hot for 50 hours—at a cost, in London, of between 8½d. and 9d. It is generally known that Mr. Therm contains exactly the same amount of heat as 29.3 units of electricity.
All the newest Therm-saving appliances can be seen at the Gas Showrooms
THE GAS LIGHT AND COKE COMPANY—never lets London down

Introducing Mr. Therm

THE GREAT
THERM CASE
WARM PASSAGES IN COURT
BEFORE Mr. Justice Playfair, in the Court of Public Interest. Hearing was resumed this morning in the great Therm Case. A lively scene took place as counsel began cross-examining the witness, Therm.
Counsel: You claim to be a Therm of Gas within the meaning of the Act?
Judge: Let us begin by defining our Therms. (Laughter.) What is a Therm?
Counsel: A Therm, my lord, is the Government standard measure of heat, as the yard is of length, or the pound of weight. A Therm contains as much heat as 29.3 units of electricity, and costs, in London, between 8½d. and 9d.
Judge: Now that we have the Parliamentary significance of the therm "Term"—er, term "Therm," let us proceed.
Counsel: Be careful. You say you are a Therm of Gas?
Witness: Yes.
Counsel: Can you cook eight dinners for a family of four?
Witness: Yes.
Counsel: Now be very careful. Will you swear that you can heat eight baths—not bird-baths, remember, not foot-baths, but full-length baths—to the right degree of heat for an acceptable hot bath?
Witness: Yes, Yes, YES!
Judge: Less heat, pray—even if you are a Therm! (Laughter.)
Counsel: And are you much the least expensive and most efficient way of having heat in the home to turn on and off at will?
Witness: I am. (Sensation.)
THE GAS LIGHT & COKE COMPANY never lets London down.

A Case In Point

subject find yourself interested as soon as you open the page of a newspaper in which it appears, or slit the envelope from which it dropped, or pass the hoarding on which it is displayed?

2. Do you, once your interest has been caught, find yourself reading on and understanding what is said, exactly and easily?

3. Do you feel that those responsible for it really believe every word they have written and every picture they have drawn? Insincerity is absolutely fatal to effectiveness in an advertisement.

4. Does it definitely invite the reader to take action? That is to say, does it leave him wanting to buy something, knowing where he can buy it and how much it will cost him? All advertisements need not pass this particular test since some of them may legitimately provide a favourable background for specific sales.

5. Is it driving home a message that has been made public before? I put in this point not, of course, because all advertisements should say something that has been said in the past, but as a warning against a very general tendency on the part of advertisers to get tired of what they are saying. Don't think that because you said something in public last week or last year and naturally remember it yourself, that everybody else will necessarily remember it too. A message is often only beginning to get home when those who are sending it out are getting tired of it. Repetition is an integral part of publicity, just as "follow through" is as much a part of a successful stroke at golf as is the approach and the actual striking of the ball."

Accounting Section

E. B. Nutt
Chairman-Elect, Acctg. Section

"WRINKLES"

FROM the Accounting Machines Committee, Charles E. Eble, Chairman, Cons. Gas Co. of New York, the following "wrinkles" have been selected.

The Practicability of Fountain Pens in the Office

Fountain pens are supplied to employees who have a great deal of writing to do. Employees select the type of pens most suitable for their own use. Separate fountain pens are used for different colored inks. Departments are equipped with the necessary facilities for the maintenance of pens by employees.

When fountain pen points become worn or parts are broken, the pens are turned in for repairs. The repair costs are charged to the departments. Employees are charged with the cost of pens if they are lost.

The use of fountain pens by the clerical force has eliminated the constant dipping of pen in inkwell, and the occasional blot or smudge which was caused by the scratching of a new or worn-out pen point. The broken or mutilated pen holder has also disappeared.

The supplying of fountain pens to employees has proven to be practical in that the clerks' desks are neat and orderly, production and quality have been improved, thus resulting in considerable time savings.

To Increase the Efficiency of Meter-Reading

When more than one meter is set in the premises and meters are arranged in banks, the meter set orders are marked by the fitter 1, 2, 3, etc., beginning with the first meter to the left regardless of the meter number or what it supplies.

To increase meter-reading efficiency, the arrangement of the sheets in the meter-reading binders corresponds with the position of the meters and the sheets are inserted in the meter-reading sheet binders and dodgers, if used, in this numerical sequence as numbered by the fitter.

Therefore, no difficulty is experienced in reading meters since they are read from left to right and the meter-reading sheets are arranged in this numerical order.

Saving Postage Pennies

It was the custom prior to the increase of postage rates to mail all monthly bills for gas consumption. In order to save this postage expenditure, all bills are now enclosed in outlook envelopes on which is printed the following:

ENCLOSED
IS YOUR
GAS BILL
SAVE THE DISCOUNT

This procedure also keeps the amount of the bill from the observation of persons for whom it is not intended and renders the bill in a more secure way as it can be dropped in the customer's mail box. Advertising matter is likewise enclosed with the customer's bill. It is believed that the rendering of bills in this manner has an appeal to the customer, particularly from the viewpoint of privacy as to the amount of the bill.

Explanation to Customers Why Two Bills Are Rendered in One Month

It is the practice to render minimum bills 10 days after the regular reading day on all open meter accounts on which meter readings could not be obtained and for which dial cards were not returned.

This often confuses the customers when later during the same month a meter reading is obtained on which a revised bill is then rendered.

When the second bill is received, the customer has two bills for the same month and, as no explanation is sent with the revised (second bill), confusion results and inquiries are made. This makes it necessary to send a representative to make an explanation.

To avoid confusion to the customer, and also the extra work involved by explanation, a paster reading as follows accompanies the revised bill.

This bill is rendered to the meter reading obtained on .....
It takes the place of the minimum bill recently rendered to..... when we were unable to obtain the reading of your meter.
The minimum bill may be destroyed.

Perpetual Stores Control

To obtain the proper reporting of and accounting for all material and merchandise issued from Stores and as a perpetual check to all Stores activities, a physical count of all material and merchandise can be taken two or three times a year, this count checked with the stores record cards to verify the card balance. The form, Exhibit 2, is used for this purpose. The form is designed for use in companies where duplicate records or single stores records are maintained.

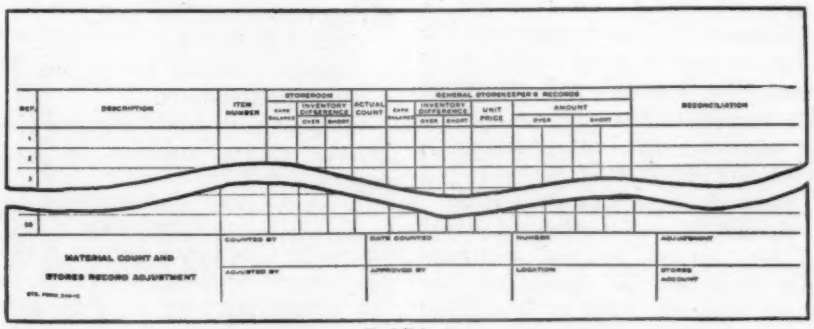


Exhibit 2

The procedure in preparing for and counting the material is as follows:

After determining the number of items to be counted each day or week to complete the required number of counts for the year, commence at the beginning of the stores record cards and list the items to be counted in code order or by classes of material. Counting is to be done the last operation in the day or the first thing in the morning and after all receipts and disbursements have been recorded on the stores record cards. After the count is made, insert the stores record card balance. The unit price is inserted on items where there is an overage or shortage. If there are items on which the quantities do not agree, these differences should be thoroughly investigated and every effort made to correct them.

Collection Problems

Due to increased postage rates and the increased number of notices, it became necessary to look for some other economical way of notifying delinquent customers.

A paster to take the place of the discontinue notice was adopted which is attached on bills warranting such a paster—the decision being made by the Credit and Collection Division when the bills are compared with the ledger before mailing or delivery. This paster is attached to the cashier's coupon on the bill and notifies the customer that bills are payable upon presentation and that unless paid on or before a certain date, service will be discontinued.

In lieu of the initial delinquency notice, a paster is used which notifies the customer that the amount on the bill is due and prompt remittance would be appreciated.

When delivering bills, the collector calls the customer's attention to the amount due on all bills that bear a discontinuance notice, provided a remittance is not received. If the bill carries an initial delinquency notice, he makes no comment.

Cashier's coupons that carry either one of the two notices are detached by the collector in the event of a payment and the customer automatically avoids receiving the notice.

Prevention of Errors on Customers' Accounts

Collection sheets are prepared seven days after due date of bill at which time the office records of customers' bills are separated into two bundles, the paid and unpaid.

To distinguish between paid and unpaid accounts, the upper left hand corners of the paid records are cut off on the bias, Exhibit 1.

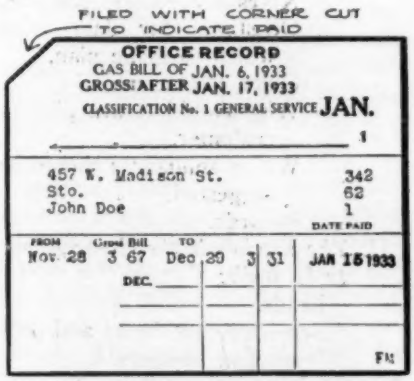


Exhibit 1

The unpaid records are forwarded to the typist for the preparation of collection sheets. After the collection sheets have been prepared, the stubs are returned to the trays and filed. The unpaid records are filed in the front section of the tray, in account order, while the paid records follow directly behind.

The purpose of this operation is to prevent errors in filing; also to determine responsibility, if an unpaid record is left in the paid file. The separation of these records between paid and unpaid and the cutting off of the corners have been of material help in inquiry work and the rendering of duplicate bills.

Home Service Meeting

Kitchen Modernization

FROM Home Service Subcommittee Report, Kathleen Atkinson, Chairman.

(Introduction: The Domestic Range Committee in making its report to the National Directing Committee of Executives requested a recommendation from the Home Service Committee as to the operation of a kitchen modernization service. It was thought that this plan of operation, listing actual points to be considered, would be of great assistance to companies interested in starting such a project.—Ruth H. Kleinmaier.)

Summarized Outline

I. *Employee's and Customer's Kitchens:*
Meaning of term "Kitchen Modernization."
Object of service.

Where to start project—with employee.
Suggestions for Interesting Employee.
When to offer service, and why.
How to secure prospects for "Kitchen Modernization."

I-a. *Standards of Modern All-Gas Kitchens:*
Knowledge necessary to carry on project.
Where to obtain this knowledge.
Plan of procedure:
Necessary outside contacts.
Questions for data from which to make plan.
Office Procedure.
Who should return plan to customer.
Which appliances should be suggested.
Records.

II. *The Kitchen in the Home About to be Built:*
Leads.
Service to architects and prospective builders.

III. *Model All Gas Kitchens:*
Dealer's stores and department stores.
Busses or vans.
Company's main office.
General suggestions about construction and use.

Outline in Detail

I. *Employee's and Customer's Kitchens:*

Why modernize? In the interests of efficiency and for the esthetic value of attractive, well-planned surroundings.

A. WHAT DOES THE TERM "KITCHEN MODERNIZATION" MEAN?

It is a plan of service offered to anyone who wishes to make their kitchen up-to-date by redecorating, replacement, rearrangement, or all three.

The object of such a service is to create a desire on the part of an employee or customer for a modern all-gas kitchen, starting with some new piece of automatic gas equipment, probably an automatic gas range.

B. WHERE TO START THE PROJECT?

With the employee.

The sales manager will think of many plans whereby the employee can be stimulated into purchasing a new gas range and other pieces of gas equipment used in a modern gas kitchen. Some suggestions are: Special prices for a limited time, with extended period for payments. Appeal to loyalty and the fact that gas employees are looked to as authorities on gas equipment. Offer a bonus to employees when a prospect they turn in results in a sale. To employees owning a new piece of equipment the bonus should be larger than to one who does not have a modern range, refrigerator or water heater. If the merchandise is paid for, and twelve prospects he turns in result in as many sales, his own equipment might be given him free. Or, if paying for his equipment, the bonus could apply in full against payments, or part of it applied against payments, and the rest paid him in cash.

C. IF AN EMPLOYEE OR A CUSTOMER HAS NOT PURCHASED A NEW RANGE SHOULD THE SERVICE BE OFFERED?

Yes, because it will create confidence and good-will and sooner or later will lead to the purchase of equipment, for a newly decorated kitchen, or one in which other pieces have been replaced, will cry aloud for the new range.

D. HOW TO SECURE PROSPECTS FOR KITCHEN MODERNIZATION?

Through advertising the service.

Special prices, for a limited period of time, on one piece of merchandise to secure an entrée into the home, with the hope of interesting the customer in purchasing another piece. When the equipment is installed the kitchen modernization service is offered. The opportunity to make payments over period of time sufficiently long would be an incentive to buy.

Special courses in cooking and kitchen efficiency.

The interweaving of kitchen modernization information with cooking and food information given during demonstrations or classes.

Through home call contacts when new piece of equipment is installed or an old piece is serviced. When a customer purchased a new range, for instance, a letter could be sent her from the home service department announcing the kitchen modernization service. Enclosed in the letter might be a color card showing various color schemes for her kitchen worked around the new range. Colored samples of wall and floor coverings, curtains, etc., could be pasted on the card. Even though no call is made on the customer, color card and other kitchen planning material could be sent her to arouse her interest.

Use of model kitchen exhibits in main office in connection with cooking or demonstration courses; and placement of model kitchen in outlying territories in dealers' stores as a background for demonstrations given in the store.

Talks on this subject before women's clubs.

Neighborhood competitions following neighborhood demonstrations. Suggest that these competitions take the form of charts drawn by customers of their kitchens as they are, and as they should be to be rated as modern and convenient. Ratings to be given by someone outside the Gas Company, and suitable prizes awarded.

Cooperation with fairs, food and household equipment shows by erecting a model kitchen on premises and giving demonstrations in it.

Contacting high school groups.

Through company employees.

Through architects.

Contacts with newly engaged girls in the society columns of local papers.

In combination companies lighting recommendations should include specifications for a modern gas kitchen.

I-A. *What are the standards for a modern all-gas kitchen?*

A modern heat-controlled, insulated gas range with automatic features, passed by the A.G.A. Laboratory.

A modern gas refrigerator.

A good sink with plenty of *gas-heated water.*

A good work table or cabinet.

Adequate storage shelves and cupboards.

Comfortable heights for working surfaces.

Equipment so placed as to reduce labor.

Suitable and necessary amount of small equipment.

Comfortable, easily-cared-for floor.

Sanitary wall finish.

Adequate lighting and ventilation.

Electric outlets for small equipment.

Cheerful and suitable color scheme.

B. *How can a home service work-*

er help an employee or customer to modernize her kitchen?

By having a practical knowledge of the subjects outlined above that is dependable and accurate.

C. *Where to get this information?*

About the gas equipment? In own industry and company, from A.G.A. courses and the Laboratory, and from other courses sponsored by the Home Service Committee. A working knowledge of competitive equipment is also necessary.

About other points? By reading material on the subject of kitchens that is up-to-date. Such material is to be had from the home management or home economics departments of colleges, from the Home Economics Department at Washington, D. C., from the leading women's magazines publishing articles and pamphlets on this subject, and from the study of equipment and materials in local stores.

II-A. *Procedure:*

Where to secure information to organize plan; have as much as possible before offering services. Advisable to make contacts with following groups in your community:

a. Builders.
b. Architects.
c. Plumbers.
d. Cabinet manufacturers.
e. Manufacturers of floor and wall coverings.

It is further suggested that the local stores be canvassed to find out what lines of good equipment and other kitchen furnishings they carry. Obtain prices and catalogues, and samples of paper, curtain materials, floor coverings, etc., where possible. Price information should be used as a guide when making a general estimate of probable cost for customer. The customer should do all subsequent shopping and be responsible for her own decisions. The home service worker should act only as a guide.

B. *Suggested questions for obtaining data:*

1. Name and address of customer.
2. Size and shape of kitchen; number, location and size of windows and doors, with window height from floor.
3. To what extent is modernizing to be done?
4. Equipment now in use, with sizes or measurements of same.
5. Working methods of person or persons who use kitchen.
6. Size of family.
7. Is kitchen used as a laundry? And for meal service as well as meal preparation?
8. Condition of present equipment; is any of it to be replaced immediately?
9. Present lighting and ventilation facilities.
10. Number and position of electrical outlets. What electrical equipment is in use.

Other questions will come to mind when the survey call is being made in the customer's home.

C. *Office Procedure:*

Following the survey call, whoever has made it (the home service director or one of her assistants) should make a drawing to scale of the kitchen as it exists, with another showing suggested changes. From this a blueprint and final colored picture can be made by the company architect. The blueprint will show the modernized kitchen drawn to scale and the colored picture will enable the customer to visualize the finished plan. If new equipment is suggested, attach marked catalogues; attach, also, any other material and information that will be helpful to the customer.

D. *Who should return the plan to the customer?*

This depends entirely on the situation:

1. The dealer.
2. The company salesman.
3. The home service consultant.

E. *Record of plans made:*

a. It is quite essential that a complete record be kept of all plans made. This should include:

1. Name and address.
2. Name of appliances suggested.
3. Name of appliances sold. Checking back regularly on plans that have gone out to the customer.
4. Record of all complete gas homes or kitchens sold with the aid of this plan.

II. *The Kitchen in the Home About to be Built:*

The salesmen might turn in leads obtained by following up building permits; they might also investigate engagement announcements to see which couples are planning to build and turn those leads over to the home service department as prospects for the kitchen planning service. If no sale was made by the salesman, home service could attempt to interest them in the kitchen and home modernization plan, leading up to a sale later.

If practicable, some one in the organization might be assigned to definitely work with architects on kitchen plans. Assistance given would include suggestions for adequate floor and wall space to accommodate necessary large equipment, such as range, refrigerator, sink, cupboards and shelves, cabinet and tables, all efficiently arranged; suitable lighting and ventilation; electric outlets, and so on. The house heating department should be informed about all contacts made through this service.

III. *Model All-Gas Kitchens:*

It is suggested that the sales manager or home service director make the original contact with dealers where it is thought that a model all-gas kitchen in his store would help him and the gas company in that territory. They should be responsible, too, for department store contacts for the same purpose.

All-gas model kitchens in busses or vans, manned by gas company employees, to go out to outlying territories. Nothing should be done in a dealer's territory without cooperating with him.

All-gas model kitchens in the company's main office, on the sales floor preferably, can be worked out with the help of home service.

All model kitchens, to be effective, should have three walls; they should be planned to meet all the standards of a modern model kitchen for an average home, and be equipped with the latest gas equipment. Cooking demonstrations at stated periods would be one means of drawing people into the kitchens. During the demonstrations references to the features of the kitchen should be made.

IV. *Home Modernization:*

Selling the idea of an all-gas kitchen will lead to the all-gas home. Should we not start with the kitchen and work out gradually to the rest of the home?

MEMO: A weekly written report to the sales manager of any and all contacts and work accomplished through or by the kitchen planning service will keep him informed.

ELEMENTS OF GAS TECHNOLOGY

Manufacture of Commercial Gases—

Producer Gas

THERE are four reactions which take place when steam is blown through a bed of incandescent carbon, as follows:

$$C + H_2O = CO + H_2 \quad -56{,}718 \text{ B.t.u.}$$
$$C + 2H_2O = CO_2 + 2H_2 \quad -38{,}466 \text{ B.t.u.}$$
$$CO_2 + H_2 = CO + H_2O \quad -18{,}250 \text{ B.t.u.}$$
$$C + CO_2 = 2CO \quad -74{,}970 \text{ B.t.u.}$$

In all of these reactions, H_2O is to be considered as remaining in the gaseous state. The first reaction is the dominant one.

To clearly understand what happens in the gas producer, it may be considered as consisting of several definite zones, represented in columnar form by Fig. 4. The function of each zone and its reactions are clearly shown. It is understood, of course, that under actual conditions, there are no such sharp lines of division between the so-called zones and that each gradually passes into the one adjacent to it. As the entering mixture of steam and air passes through the ash zone, it does not undergo any change in composition, but serves to cool the ash and is at the same time preheated. Combustion of carbon next takes place and the O_2 in the air is entirely used up as the gases pass through the next few inches of the fuel bed nothing but CO_2 being produced. The production of CO_2 is at a maximum about 3 to 4 inches above the cinders, and from this point upward the CO_2 content diminishes.

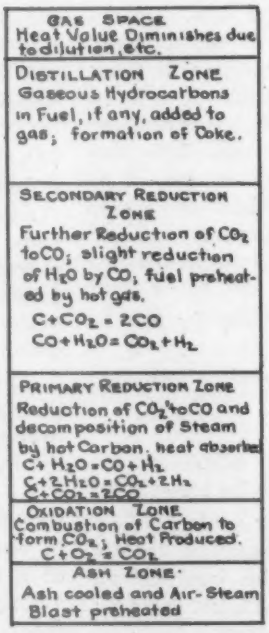

GAS SPACE
Heat Value Diminishes due to dilution, etc.
DISTILLATION ZONE
Gaseous Hydrocarbons in Fuel, if any, added to gas; formation of Coke.
SECONDARY REDUCTION ZONE
Further Reduction of CO_2 to CO; slight reduction of H_2O by CO; fuel preheated by hot gas.
$C+CO_2=2CO$
$CO+H_2O=CO_2+H_2$
PRIMARY REDUCTION ZONE
Reduction of CO_2 to CO and decomposition of Steam by hot Carbon, heat absorbed
$C+H_2O=CO+H_2$
$C+2H_2O=CO_2+2H_2$
$C+CO_2=2CO$
OXIDATION ZONE
Combustion of Carbon to form CO_2; Heat Produced.
$C+O_2=CO_2$
ASH ZONE
Ash cooled and Air-Steam Blast preheated

FIG. 4.—Zones of Reaction in Gas Producers.

When the O_2 has practically all disappeared, and the CO_2 content is near the maximum, the formation of CO begins and continues through the balance of the operation. No water is decomposed until the oxygen has disappeared, but at about the same time as CO begins to form, decomposition of H_2O also sets in and H_2 is rapidly produced. All this takes place in the primary or first reduction zone. Above this, in the secondary reduction zone, some CO_2 is reduced to CO and more steam is reduced to H_2. Finally, at the top of the fuel bed, any volatile constituents in the fuel are distilled off and pass into the gas in the gas space. This has the effect of adding some illuminants to the gas, in addition to other hydrocarbons, and the heat value of the gas is considerably increased.

In the gas space above the fuel bed, the gas is no longer in contact with incandescent carbon and some change of composition takes place, due to dilution and to reversion of CO to CO_2. The heat value consequently decreases.

It has been found that the depth of the fuel bed, the proportion of steam to air, the velocity of the gas, and the time of contact all have an important bearing on the efficiency of a producer. The greatest efficiency is obtained when 0.3 to 0.4 lb. of steam are blown per lb. of coal fired, but the steam actually used in practice generally exceeds this, to prevent excessive clinker formation.

Increasing the depth of the fuel bed increases the amount of steam decomposed, for a given ratio of steam to coal; because the secondary reduction zone becomes thicker and the fuel is at a higher temperature. The depth of the fuel bed has a great influence on the composition of the gas. Haslam and Russel (Fuels and Their Combustion, page 563) state that the constituents of producer gas come to an apparent equilibrium value $K^1 = \frac{(CO_2)\,(H_2)}{(H_2O)\,(CO)}$ dependent on the thickness of the fuel bed alone, and independent of other factors. By experiment, it has been found that the value K^1 bears a lineal relationship to the depth of the fuel bed expressed by the equation

$$K^1 = 0.096L = \frac{(CO_2)\,(H_2)}{(H_2O)\,(CO)}$$

in which L^8=depth of fuel bed in feet;

(H_2O) = volume of total moisture (undecomposed steam plus free and combined moisture in the fuel) per 100 volumes of dry producer gas;

(CO_2) (H_2) and (CO) = the per cents of CO_2, H_2 and CO in the dry gas as determined by analysis of the gas in an apparatus of the Orsat type.

From the above equation, we derive

$$H_2O = \frac{(CO)\,(H_2)}{(.096L)\,(CO)}$$

which observations have shown to be accurate within 10 per cent and which offers a way of determining the approximate amount of water in producer gas by means of an ordinary gas analysis, and avoids the direct determination of water in producer gas which is sometimes difficult to carry out at the ordinary producer gas plant.

As previously stated, the heat value of the producer gas is at a maximum when about 0.4 lb. of steam is blown per pound of coal, but that it is often necessary to use 0.5 or 0.6 lb. of steam per lb. of coal in order to reduce clinkers. Use of too great an amount of steam in the air blast has the following disadvantages:

The heat value of the gas is decreased and the amounts of water and CO_2 are increased; the thermal efficiency of the producer is lowered; and the efficiency of the gas itself is decreased. However, continuity of operation is more important to the operator than efficiency, hence sufficient steam to keep the producers free of clinker must be supplied. It is important when buying coal for use in gas producers to know the fusion point of the ash, as well as the amount of ash, since less steam will be required for coals having ash of a high fusion point.

The condition of the fuel bed is also important. The bed should be kept uniformly covered with raw coal; it should be kept regularly and properly poked, and the cinder should be continuously removed.

The rate at which fuel can be gasified in a producer is dependent on the size and type of fuel used, its moisture content, and the amount and fusibility of the ash. Modern producers are able to gasify as much as 50 lb. of coal per square foot of surface per hour, but the average rate in American practice is about 25 lb. per sq. ft. per hr. for well-operated plants. Some hand-operated producers, using a poor grade of fuel, will show a gasification rate of 8 lb. per sq. ft. per hr. or even less, but such low rates are gradually passing out of the picture.

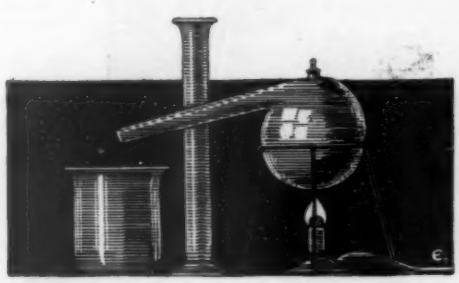
The quality of the gas being produced can be determined either by inspection or by analysis, the latter method of course being the more accurate. However, a trained observer can come surprisingly close to making a quick and fairly accurate estimate of the gas quality. For example, the best gas is being produced if its appearance is somewhat yellowish, due to distillation of the volatiles, and the top of the producer fuel bed is a dull red. If the gas is dark and sooty, with no yellow color, it indicates that either the temperature of the producer is too high, or the fuel bed too thin, or that the gasification rate is too high. A gas with no soot shows that the producer is being operated below capacity, or else the steam rate is too high.

In estimating the quality of the gas by actual analysis, it is often sufficient to determine only the percentage of CO_2 present. The best modern practice allows for a percentage of CO_2 ranging from 2 to 5 per cent. Over 5 per cent CO_2 shows that something is wrong with the operation, and that the fault may be with one or more of the following:

1.—Too much steam in the blast.
2.—Fuel bed not deep enough.
3.—Gas rate too high.
4.—Leakage of air into the gas space.
5.—Channels through the fuel bed resulting from poor blast distribution, too little poking, too deep poking, or excessive clinker formation.

FUELS USED IN GAS PRODUCERS—It is possible to gasify practically any carbonaceous fuel in a gas producer, but most producer gas is manufactured from bituminous coal because of its cheapness. Coke and pea-size anthracite are also widely used, particularly in the gas industry. The coal selected should be non-coking, with a hydrogen-oxygen ratio of about 0.50 on an ash-free and moisture free basis. High volatile coals, containing over 35 per cent volatile matter, and high oxygen coals are generally the most satisfactory. Producer gas coals should have an ash with a high fusing point, generally above 2600° F., and should not contain over 1 per cent sulphur, although coals having higher percentages of sulphur have been successfully used. Moisture in the coal should be kept as low as possible, since with a high moisture content, considerable heat loss is inevitable, due to the fact that heat from the producer gas is used up in evaporating this moisture, the sensible heat in the water vapor passes out with the stack gases, and water vapor brings about an oxidation of CO to CO_2, thus increasing the CO_2 content of the gas.

(Continued in November issue)

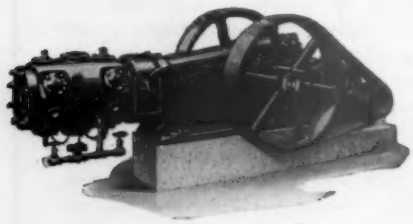


EQUIPMENT NEWS

New Compressor Announced by Ingersoll-Rand Company

A new single-stage, belt-driven compressor designed for heavy-duty service is announced by Ingersoll-Rand Company, 11 Broadway, New York. It is designated the Class ES. It has one horizontal, double-acting cylinder and operates at moderate speeds. It is available in sizes from 10 to 125 hp., and for discharge pressures from 5 to 150 pounds.

The machine is suitable wherever full-load, continuous service is required and wherever power cost is an important



consideration. It will give economical standby service for large compressors whose full capacity is not always needed. It will satisfactorily handle poisonous or inflammable gases, or any others that must be handled without leakage.

Low air speeds and small pressure losses obtained by liberal design of air passages and valves insure maximum economy. These features and effective water jacketing also insure low air temperatures, which simplifies lubrication problems and lengthens the service life of valves, cylinders, and piston rings. A double row of Timken tapered-roller bearings on each end of the crankshaft reduce friction, make bearing adjustments unnecessary for a long time, and provide rigidity against all strains. Regulating equipment suitable for any conditions of service can be furnished.

Sprague to Sell Pipe Line Safety System

The Sprague Meter Company of Bridgeport, Conn., announces that they are now acting as Selling Agents for the X-Pander Pipe Line Safety System, manufactured by the Paul G. Wagner Company of Los Angeles, California.

This product is designed to seal the gas line, at the time of meter shut-off, to prevent the theft of gas; also to stop leakage and the subsequent danger of explosion.

X-Pander System utilizes an expansible rubber plug and an ingenious operating key wrench. In practice, the plug is securely hooked to the wrench, inserted in the pipe and expanded to form a perfect seal. The wrench is then unhooked and removed. The plug and wrench combination is so designed that the plug must be sufficiently expanded in the pipe to make a leak proof seal or the wrench cannot be unhooked. This feature eliminates all element of human error and makes the system foolproof.

All plugs are serially numbered to enable the operating company to keep an accurate record of each installation.

Plugs are made to fit the various pipe sizes and are adaptable to standard meter hook-ups. Wrenches are available in three lengths, the longest of which allows the plug to be inserted to a depth of ten inches in the pipe. This deep insertion is a positive guarantee against tampering.

Chapman Safety Service Tee

Chapman Valve Mfg. Co., Indian Orchard, Mass., recently issued a folder, illustrating and describing their Safety Service Tee. The Tee is designed for the tapping of small service connections in high pressure distribution mains, rapidly and effectively. It consists of a steel body 4½ inches high, which is chambered at the bottom to allow welding to the main. Midway, it has a 5 inch length of ¾ inch or 1 inch pipe, welded to the body of the tee.

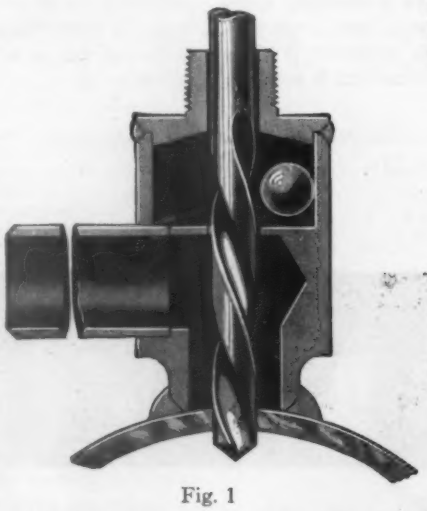


Fig. 1

The tee is designed to act as a check valve, for the interior chamber is provided with an aluminum ball which permits the passage of the drill but upon withdrawal of the drill is pushed upward by the released gas pressure, effectively closing the port through which the drill is withdrawn.

Fig. 1 shows the tee welded to the main. A tapping tool is attached to the threaded top of the tee and drilling proceeds as usual. The drill in passing through the tee clears the aluminum check ball in the interior chamber.

Fig. 2 shows how, as the drill is withdrawn, the aluminum ball is forced up by the velocity of gas following the drill, effectively closing the port through which the drill has passed and permitting the capping of the tee without danger to the workman.

Copy of folder will be mailed on request.

New Crane and Shovel Literature

Link-Belt models K-38, 44, and 55 are covered in three attractively illustrated eight-page 8½" x 11" folders recently issued by Link-Belt Company, 300 West Pershing Road, Chicago, on Crawler-Mounted Shovel, Crane, Dragline Equipment. Lifting capacities, clearance diagrams and other data are given. Copies will be mailed upon request.

Electrolux Secures 500 New Outlets

Since January of this year, more than 500 new Electrolux outlets have been franchised, a number of them being department stores and retailers already handling electric refrigerators, according to F. E. Sellman, vice president in charge of sales of Servel, Inc.

August Electrolux shipments were more than 100 per cent greater than those of the same month last year, bringing the year's total to date ahead of similar periods in both 1931 and 1932, he states.

Five distributors of bottled gas—Pyrofax, Philgas, Shellane, Skelgas, and Standard Flamo—are now merchandising Electrolux refrigerators through special departments organized for this purpose.

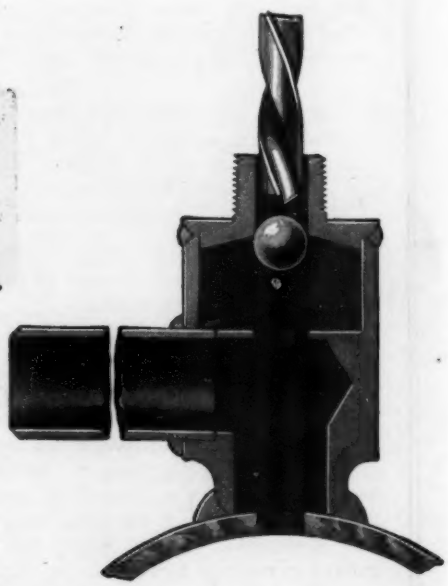
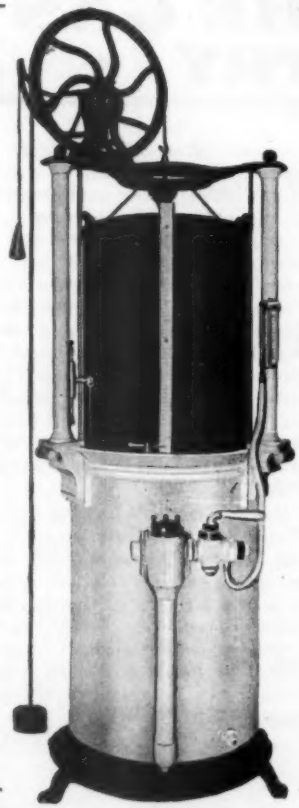


Fig. 2

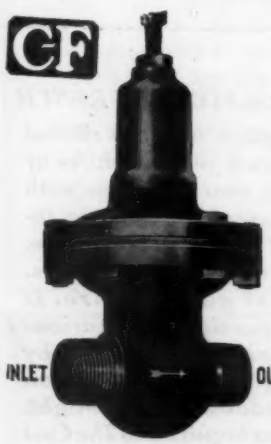
SUPERIOR

Gas Meters
Provers
Service Cleaners
Diaphragms
Repairs



SUPERIOR METER CO.
167-41st Street
Brooklyn, N. Y.

For Extreme
HIGH PRESSURE SERVICE



Little Hercules Gas Regulator

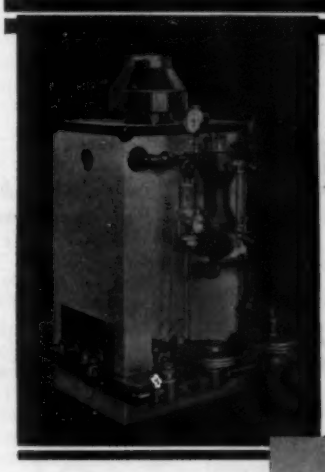
THE Little Hercules Regulator weighs only 8 pounds, yet is capable of controlling inlet pressures up to 1000 pounds. Such pressures it will reduce to anything between 5 and 100 pounds as required. It is intended for use in conjunction with such a device as the Fulton House Regulator, since competent engineers do not favor carrying high gas pressures to the point of distribution with only a single valve to govern it.

The Little Hercules is also constructed as a relief valve which will give excellent service wherever a small spring type relief valve is required.

Chaplin-Fulton equipment for all needs of gas regulation and for various other forms of pressure control has been in successful use over forty years. Correspondence on any specific need is invited. Literature on request.

The Chaplin-Fulton Mfg. Company
28-40 Penn Ave. Pittsburgh, Pa.

"NOW IN OUR 6th YEAR OF USING CHACE"



B-LINE BOILER CO.

B-LINE
Gas Boilers
for Hot Water, Steam or Vapor Heating

Chace Bimetal is especially adapted for high temperature applications. 1200° F without distortion. Consult our Eng Dept regarding your problem.

CHACE THERMOSTATIC BIMETAL
"It Bends with the Heat"

W. M. CHACE VALVE CO.
1610 Beard Avenue . . Detroit, Mich.

NEWS OF THE GAS INDUSTRY

Public Service Electric & Gas Reduces Rates

The cost of gas fuel for heating and for cooling homes and buildings was further reduced by Public Service Electric and Gas Company, Newark, N. J., under a new schedule of rates which became effective with the September, 1933, meter readings. Consumers who use more than half of their annual gas requirements for building heating or cooling purposes, and who guarantee to use at least $125 worth of gas per year, will be given a rate of 65 cents per 1,000 cubic feet for gas consumed in excess of the first 5,000 cubic feet per month. The first 5,000 cubic feet will be billed at the same rates as the uniform rate for gas.

Lone Star to Give Additional Employment

Employment will be given to approximately 400 persons and purchasing power will be increased by a minimum of $500,000 with the operation of the Lone Star gas system under the national code for the natural gas industry, according to L. B. Denning, president.

Companies comprising the system are the Lone Star Gas Co., Dallas Gas Co., Fort Worth Division of Lone Star, County Gas Co., Municipal Gas Co., Community Natural Gas Co., Lone Star Gasoline Co., Texas Cities Gas Co., Stamford and Western Gas Co. and Northwest Texas Gas Co.

Natural Gas to Heat School

The board of education of Fort Dodge, Iowa, has decided that natural gas will be used for heating the recently completed junior high school building during the 1933-34 school term.

Oklahoma U. Offers First And Only Natural Gas Engineering Course

The course in natural gas engineering announced originally by the University of Oklahoma last spring is announced formally in a new bulletin issued recently by the College of Engineering of the University of Oklahoma, as follows:

"The first and only natural gas engineering course offered by any university or college is given at the University of Oklahoma. The men who graduate from this course will be prepared to go into phases of the natural gas industry which covers the distribution, compression, measurement, sales, administrative and executive work in connection with the natural gas utilities. The courses offered in the curriculum of the natural gas school are especially adapted and the laboratories of this school are not equalled elsewhere in the United States. The character of work offered in the course is known to thousands of men in the natural gas industry who have had an opportunity to make personal contact with both faculty and students through attending the Southwestern Gas Measurement Short Course which has been held annually at the University of Oklahoma."

The course of the School of Natural Gas Engineering is announced in detail with William Henry Carson, M.E., as director. Professor Carson appears also as acting director of the School of Petroleum Engineering. He succeeds H. C. George, who resigned August 1 to become the head of the department of oil and gas in the University of Pittsburgh, Pa.

Public Service Company of Okla. to Extend Gas System

Engineering studies and estimates which will provide for rebuilding a part of the gas distribution system of McAlester, Okla., within the city limits are being made by the Public Service Co. of Oklahoma, according to Harry W. Pitzer, district manager of the company.

More than 65,000 ft. of new pipe has been purchased to replace some of that now in use. About 50 people will be employed to install the gas lines.

Newspaper Advertising Speeds Merchandising of Gas Refrigerators

How newspaper advertising aided in speeding up sales activity in the merchandising of gas refrigerators in Southern California towns during the past six months was stressed in an address made Sept. 27 by F. M. Banks, of Los Angeles, general superintendent of sales of the Southern California Gas Company, before the annual convention of the American Gas Association being held in Chicago at the Hotel Stevens.

Not only have the gas companies utilized extensive newspaper advertising during a trying period to promote gas refrigeration with good cumulative effect but refrigerator dealers are advertising on their own account, according to Mr. Banks.

"At the present time approximately one-half of the dealers are advertising regularly in their district newspapers," Mr. Banks said.

Mr. Banks told the delegates that the gas refrigerator has lent itself ideally to advertising and publicity "in a manner which has been duplicated by no other appliance."

In one local city campaign the Southern California Gas Company placed one thousand column inches in the dailies of one city during May and June, these ads being devoted to refrigeration. He said that approximately 13,000 column inches were placed in 92 papers in outlying districts of the city during the same period. He also explained that throughout the season the Southern Counties Gas Company placed approximately 12,000 column inches in seventy newspapers in its serving area.

Indiana Properties of Kentucky Natural Gas To Be Sold

Sale of Indiana properties of the Kentucky Natural Gas Co., was ordered August 11 by Judge Robert C. Baltzell in Federal court in Indianapolis, in a decree ordering foreclosure of a mortgage on the property. The sale will be held in Terre Haute this month by Albert Ward, Special Master in Chancery. According to present plans, a new organization, set up as the Kentucky Natural Gas Corporation, is expected to take over the property. The property includes pipe lines, land, oil and gas leases, real estate leases, contracts for purchase and sale of gas and plants and equipment of the company. The properties are in Vanderburg, Vigo, Perry, Knox, Park, Green and Gibson counties. The mortgage secures $4,500,000 gold mortgage bonds.

JUST A RATCHET WRENCH

—no other tool, no skilled labor, and yet four miles of 10-inch cast iron pipe with mechanical joints were installed in two weeks' time. The line carries 100 lbs. natural gas pressure. It tested gas-tight. The various mechanical joints made by members of the Association are fundamentally gas-tight. Address inquiries to The Cast Iron Pipe Research Association, Thos. F. Wolfe, Research Engineer, 309 Peoples Gas Building, Chicago, Ill.

CAST IRON PIPE

with mechanical joints

Look for this Trademark

HEATING BUNKER "C" OIL

for carburetting gas requires high pressure and high temperature.

ANDALE BOWED TUBE HEATERS

remain tight and are easily cleaned. These are the requirements for continuous satisfactory operation.

ANDALE COMPANY

1600 ARCH STREET
PHILADELPHIA

Byllesby Engineering and Management Corporation

Wholly-owned subsidiary of

Standard Gas and Electric Company

231 South La Salle Street, Chicago

New York Pittsburgh San Francisco

Lux Material

Guaranteed to always run uniform. It has been used by Gasworks all over the world for over 50 years. We offer same from a shipping point most conveniently located to your works. Shipped in bulk or bags.

Lux-Sponge

THE PERFECT READY MIXED CARBURETTER

For Gasworks having no facilities to mix their own Sponge we offer our celebrated "Lux Sponge," guaranteed efficient for Coal or Water Gas.
Samples upon request.

Chicago, Ill. THE ALPHA-LUX COMPANY, Inc. Philadelphia, Pa.
192 FRONT STREET - NEW YORK CITY, N. Y.

ISBELL-PORTER COMPANY

Engineers and Contractors for Complete Gas Works

I-P C

Manufacturers of All Kinds of Gas Apparatus

NEWARK · NEW JERSEY

Convention Calendar

October

20 New England Gas Association Operating Division, Worcester, Mass. D. C. Campbell, Secretary, Operating Division.

24-26 American Petroleum Institute Chicago, Ill.

Week of Oct. 29, 1934. American Gas Association 16th Annual Convention, Atlantic City, N. J.

Augments Its Utah Gas Line

Bringing in a gas well known as A. J. Poston No. 2, in the South Baxter basin of Montana, about twenty miles south of Rock Springs, Wyoming, the Mountain Fuel Supply Company connected it to its Utah line and it adds eight million cubic feet daily.

British Chimney Sweeps Are Ousted by Gas Fires

The ancient and honorable profession of chomney sweep is the latest to fall victim in Great Britain to technological unemployment.

This was revealed when a deputation of chimney sweeps recently interviewed Sir Francis Goodenough, chairman of the British Commercial Gas Association, and protested that the relentless replacing of domestic coal fires with gas fires was putting them out of business.

The deputation pleaded that if Sir Francis could not put a stop to the installing of gas fires, he, at least, ought to offer the sweeps alternative employment. He promised to place their problem before the gas industry as a whole.

Gas Franchise Granted in Laurel, Miss.

The city of Laurel, Miss., has voted by a majority of 658 to 14 in favor of granting a gas franchise to the Public Service Corp. of Mississippi. A lower rate schedule for the city will be instituted by the new company, it is stated.

Bay City, Mich. Changes to Natural Gas

The Consumers Power Co., Bay City, Mich., is changing over equipment for use of natural gas instead of the mixed fuel now being used. When the change is completed Bay City will become the first large community in the state to be served with natural gas from the Central Michigan field.

Gas Companies Merge

The West Texas Gas Co., Lubbock, Tex., has absorbed the South Plains Pipe Line Co., which hitherto has operated as an independent subsidiary.

Canadian Gas Assn. Meeting at Ottawa

The Annual Meeting of the Canadian Gas Association was held Sept. 18th and 19th at Ottawa, Canada. A large delegation of gas engineers from abroad, who attended the meeting, were met at Montreal by Mr. Hugh McNair, then Pres. of the Association and Mr. Geo. W. Allen, Secy., who conducted the delegation to Ottawa, and after the meeting accompanied the delegation to Chicago to attend the A.G.A. meeting, week of Sept. 24th. New officers of the Canadian Gas Assn. for the ensuing year are:

President, D. G. Munroe, Montreal, Que.; 1st Vice-Pres. J. C. Dawson, Quebec, Que.; 2nd Vice-Pres. John Keillor, Vancouver, B. C.; Geo. W. Allen, Toronto, Ont., reelected Secy.-Treas.

United Gas Secure Options in Arkansas

The United Gas Public Service Co., Houston, Texas, is reported to have secured options on more than 300,000 acres in Bradley, Calhoun and Chicot counties in Arkansas.

It is said that careful geological tests will be made to determine if this wildcat territory is a producer before any plans are announced.

Can Use Native Natural Gas Now

The North Dakota Legislature recently passed a bill permitting the use of natural gas in State institutions provided the gas is produced in that Sate. North Dakota has had a law on its books since 1893, which had been interpreted to mean that State institutions must use local lignite coal and the law now permits the use of native natural gas on a parity with native coal.

Natural Gas Well in Duval County, Texas

A 40,000,000 cu. ft. natural gas well has been brought in by Conway & Campbell in Northern Duval County, Texas. This well is off the regular path to the east of the Government Wells chain of gas pools, but it is in the same sand as the Government Wells pool at 2749 to 2756 ft. This is considered a very important development.

Markleville Citizens Gas & Oil Co. Dissolved

The certificate of the Indiana secretary of state, showing the voluntary dissolution of the Markleville Citizens Gas & Oil Co., Markleville, Ind., has been filed for record. The company was organized back in the days of natural gas in northeastern Indiana to provide gas for domestic use.

John A. Fry

Elected chairman, Manufacturers' Section, A. G. A. for 1933-34

Gas—The Only Thing That Burns

Gas is the only thing that burns. When paper, wood, coal or other fuel is placed in a furnace and lit all that burns is gas. The solid part of the fuel remains in the form of cinders, dust and ashes, if it has not already gone up the chimney in the form of smoke, to descend as smut and soot.

Gas, purified and properly manufactured, is the only intelligent, clean and scientific means of obtaining heat. It can be piped to any part of a building, and made the source of heat, in as large or as small quantities as is desired, any time of the day or night.

These are a few of the advantages of gas heat that have induced many factory managers to replace crude fuels by gas.

Gas Company Moves

The Georgia Natural Gas Corp., Barnesville, Ga., has moved into new and more spacious quarters in the Middlebrooks Building there.

Michigan Town Considering Natural Gas Line

The city commission of Big Rapids, Mich., has voted to investigate the feasibility of building a gas pipe line to the city gates to provide natural gas piped from the Michigan fields by the Michigan Natural Gas Corp.

Miami Company Will Sell Gas Appliances

Organized to merchandise various makes of gas appliances in Miami, Fla., is Gas Appliances, Inc., which has opened a 5,000 sq. ft. display and sales room in the Franklin building. The company has been franchised as an Electrolux dealer.

All sizes up to 3,400 cu. ft. capacity

Meters
Diaphragms
Repairs
Provers
Pumps
Calorimeters
Wet Meters
Gauges
Apparatus

METER REPAIR PARTS

FOR

ALL MAKES - ALL SIZES OF METERS

LARGEST GAS COMPANIES NOW USING OUR PARTS

SEND FOR OUR CIRCULAR ON METER REPAIR PARTS

SAMPLES AND PRICES GLADLY SENT

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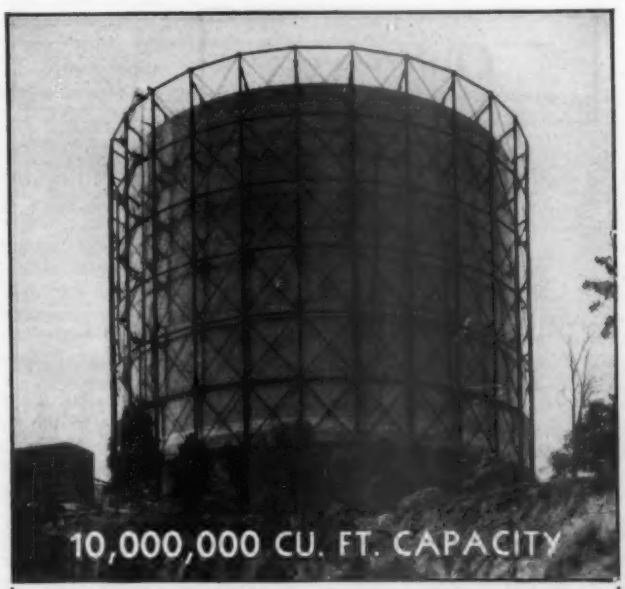
LAMBERT METER CO.

BUSH TERM. BLDG. 4, BROOKLYN, N. Y.



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PURIFIERS · TANKS · CONDENSERS

STEEL PLATE CONSTRUCTION

INTEGRITY GOOD WORKMANSHIP FAIR DEALING

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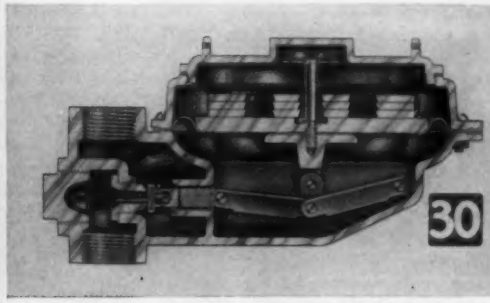

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Personals

D. E. Karn has been appointed vice-president and general manager of the Consumers Power Company, Jackson, Mich., to succeed C. W. Tippy, deceased.

Mr. Karn, who is 42 years old, was born on a farm near Peru, Indiana. He was graduated in Mechanical Engineering from Purdue University in 1915. His first position was with the Central Illinois Light Company at Peoria. A year later he was placed in charge of the steam heating system at Grand Rapids.

In 1919 Mr. Karn came to Jackson, in the Rate Department of Hodenpyl, Hardy and Company. In 1922 he was appointed Assistant to the Vice-President and General Manager of Consumers Power Company. Two years later he succeeded F. W. Hoover as head of the Securities Department of the Commonwealth Power Corporation, in which position he held the title of Vice-President of all the Commonwealth companies.

In 1927 Mr. Karn returned to Consumers Power Company, succeeding the late F. W. Blowers as Manager at Kalamazoo, coming to Jackson April 1, 1931, as Assistant General Manager.

Alfred H. Schoellkopf has been elected president of Niagara Hudson Power Corp., (N. Y.) and **Paul A. Schoellkopf,** vice-chairman of the board a newly created position. Alfred H. Schoellkopf previously had been executive vice-president of the corporation, and Paul A. Schoellkopf, president. The former recently resigned as president of the Buffalo, Niagara & Eastern Power Corp., western New York subsidiary of the Niagara Hudson system, and has moved his headquarters from Buffalo to New York.

Erling B. Stockmann, who has been Acting Purchasing Agent of the Consolidated Gas Company of New York since the death of D. C. Toal in June, has been appointed Purchasing Agent, according to an announcement by Oscar H. Fogg, Vice-president.

The appointment of **Frank H. Walsh** as Assistant Purchasing Agent was also announced.

Mr. Stockman joined the Consolidated Gas Company in 1922, as an Assistant Superintendent at the Astoria Manufacturing Plant. In 1929 he was delegated to make a special study of the purchasing requirements of the various manufacturing plants in the system, and in 1930 he was appointed Assistant Purchasing Agent. He is a member of the American Gas Association and the National Association of Purchasing Agents.

He was born in Cambridge, Mass., in 1893, and attended Massachusetts Institute of Technology, graduating in 1917 with the degree of Bachelor of Science. Following active service with the United States naval forces during the World War, he entered the ship building and marine operating business.

Mr. Walsh joined the Purchasing Department of the Consolidated Gas Company in January, 1930. Prior to this he had more than twenty years' purchasing experience in the textile business in New York. He was born in New York City in 1884 and attended New York University.

George L. Cullen, sales manager, The Harrisburg Gas Company, Harrisburg, Pa., completed 25 years as a U. G. I. man on September 1.

Mr. Cullen started with the Northern Liberties Gas Company in Philadelphia in 1908, later transferring to the Philadelphia Gas Works in the accounting and sales work. In 1917 he went to Harrisburg in his present position, then titled commercial agent.

He has taken an active part in gas association affairs for years, and has been at times a director or an officer of most of the clubs and organizations in Harrisburg during his 16 years in that city.

George S. Hawley, president of the Bridgeport Gas Light Co., Bridgeport, Conn., and president of the Connecticut Gas Association and the Bridgeport Manufacturers' Association, has been elected a director of the Bridgeport Engineering Institute.

John A. Ryan of 136 Rector Street, Germantown, Pa., an Electrolux refrigerator salesman of the Philadelphia Gas Works Company, who won the prize for being the first gas company salesman in the United States to sell 55 Electrolux refrigerators between April 1, 1933 and January 1, 1934. Ryan made the grade in five months. The presentation was made in Philadelphia by F. E. Sellman, vice-president of Electrolux, the donor of the prize.

Obituary

CHARLES W. TIPPY

Charles W. Tippy, vice-president and general manager of the Consumers Power Company, Jackson, Mich., passed away on September 15th. He was the victim of internal injuries received in a motor vehicle accident.

Born in Three Oaks, Michigan, March 6th, 1876, Mr. Tippy was fifty-seven years of age. As a boy, in 1894 and 1895, he began his career in the public utilities in the offices of the Grand Rapids Gas Light Company. He graduated from Purdue in 1899, on a scholarship he had earned, receiving the degree of Mechanical Engineer.

His first position after graduation was as a chemist with the Detroit City Gas Company. After promotion to Assistant Superintendent of that Company he went to Fulton, New York, where he built a gas plant to supersede a natural gas system, for the Noble-Moses Company, remaining there, as Manager of the Fulton Fuel and Light Company, from 1902 to 1904.

Mr. Tippy then went to Rochester, N. Y., as Superintendent of Gas Production for the Rochester Railway and Light Company. This was his first connection with Hodenpyl, Hardy and Company, who controlled the Rochester properties at the time.

In 1906 Mr. Tippy went to Pennsylvania as Manager of the Williamsport Gas Company. In 1908 he was called to Dallas, Texas, as Manager of the Dallas Gas Company, repeating there his experience in Fulton, New York, in replacing a natural gas system with manufactured gas.

From Dallas Mr. Tippy returned to Michigan, serving as assistant to the late William M. Eaton, in Detroit, in the management of the electric properties of Hodenpyl, Hardy and Company in Michigan.

Mr. Tippy came to Jackson in 1914, as Vice-President and General Manager of Consumers Power Company when it became an operating company, undertaking the unified operation of the properties it had formerly administered as a holding company.

Mr. Tippy was a Director of the Jackson City Bank and Trust Company, a member of the Rotary Club and had a part in many civic activities in Jackson.

He is survived by Mrs. Tippy, who was seriously injured in the same accident, one son, William B. Tippy of Detroit, two brothers.

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DIVIDEND NOTICE

The Board of Directors of AMERICAN LIGHT & TRACTION COMPANY, at a meeting held September 27, 1933, declared the regular quarterly dividend of 1½% on the Preferred Stock, and a dividend of 40 cents per share on the Common Stock, both payable November 1, 1933, to stockholders of record at the close of business October 14, 1933.

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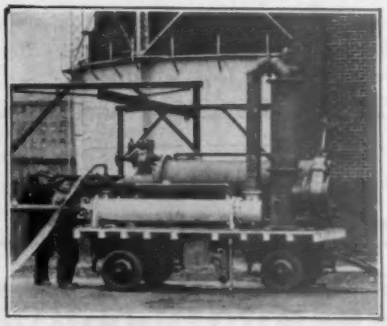

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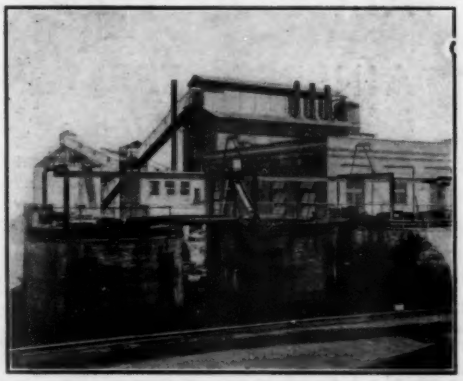

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